THE

FARMER's MAGAZINE.

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(No. II.)

PART I.

ORIGINAL COMMUNICATIONS.

FOR THE FARMER'S MAGAZINE.

The Rural Inquirer, No. 1.

IT would be an ingenious and useful object, to investigate the ancient state of husbandry in this country, and to trace out the various causes which have contributed to promote improvements in that important and necessary science. Perhaps, the field from whence *facts* could be gathered for such an investigation, is too sterile for producing satisfactory information; which might occasion, in many cases, conjecture and tradition to be substituted for positive evidence and written testimony. Be this as it may, we do not propose to undertake such an arduous task; but mean to devote this number of our inquiry to a short sketch of the substantial and valuable improvements made in Scotland since the Union of the two kingdoms; which are more extensive than in any other nation with which we are acquainted.

Before we enter upon this sketch, a few words relative to the ancient state of Scotish husbandry may be necessary.

At a very early period, the Lowlands of Scotland were partially brought into a high state of cultivation, and all the ordinary grains now in use were successfully raised upon that portion of the ground then called *in-field*. The in-field originally comprised a small space of land immediately contiguous to the farm-steading, or mains; and was afterwards gradually extended, as population and luxury increased, or as the means of improvement lay within the reach of the possessors. Hence, all the dry coastside land, and the fields adjoining to great towns and villages, were earliest improved; while those at a distance from manure, were generally allowed to remain in their natural uncultivated state.

It may readily be supposed, that cultivation, in the first instance, would be solely confined to such fields as were apparently of the richest quality; which would be easily discovered by the deepness of soil, and its aptitude to produce the greatest quantity of grass, or other plants with which the surface might be covered. The in-field would therefore in every case, be composed of the best land which the respective districts contained; and, as the whole manure raised upon the premises, was applied to the select spots which came under this description, it is not surprising, that, in the course of several centuries, their fertility should have increased to a very great height.

Under the management mentioned, it is obvious that the great body of land continued in a waste and unproductive state, being only ploughed for a few years, or as long as it would carry crops of oats, and then left to recruit itself under natural grasses and weeds. The first step to improvement was, the abolishing of *out-field*, and thereby bringing the whole land of each farm under a regular course of husbandry, agreeable to the quality of the respective soils, and the nature of the climate where the farm was situated. The greatest improvements made in Scotland have been upon these secondary lands; which in former times, without manure, fallow, and artificial grasses, were only capable of paying a very trifling rent. Good land

land may produce rich crops under many impediments, of which the value of borough acres is a striking proof; but, upon the obdurate exhausted out-field, nothing to the purpose could be accomplished, without employing the most active exertions.

It is believed, that the above statement will apply to the situation of Scotish husbandry, till the conclusion of the 17th century; since which period, a great and thorough alteration has taken place.

The chief and primary means of accomplishing this alteration, was the introduction of *Summer fallow*, which was not practised north of the Tweed sooner than the time above mentioned. Without working the ground during the dry Summer months, it was impossible to clear the infields of the immense stock of annual and root weeds which had for ages been accumulated, or to reduce the coarse sterile out-field to a proper tilth for carrying good crops of corn or artificial grasses. This valuable practice, which at all times is absolutely necessary in the first stage of improvements, has generally been practised with as much effect as in any part of Britain: and, in no country whatsoever, is greater attention bestowed upon the several processes of ploughing, harrowing, rolling, and gathering grass roots, than what is usually bestowed on the working of fallows in the Lowlands of Scotland.

The *Grass Husbandry*, which has been assiduously practised upon a great scale since the middle of the 18th century, was also of material advantage in the improvement of Scotish husbandry; and, for thirty years back, a greater quantity of seeds have been sown in the Lowland districts, than in any part of England of the same extent. The usual practice has been, to manage grass lands according to the Norfolk fashion, which is found to be more beneficial than withholding the plough for a great number of years, as is customary in all the midland and western English counties. The great advantage of artificial grasses, by enriching and refreshing the soil, are well known; and they are seldom sown in this country, except with the first crop after Summer fallow, or upon land which has undergone suitable preparation.

Turnips were cultivated in Scotland very shortly after their introduction into Britain; and Mr Cockburn of Ormiston, and other members of the *Society of Improvers*, raised them agreeably to the most approved rules. This valuable root, which is justly considered as deserving a marked attention from every farmer upon a light soil, has recently spread with rapidity over all Scotland, and is cultivated in a way superior to what is common among our southern neighbours. Mr Tull's system is uniformly adopted; which, for cleaning the ground, raising a weighty crop, and lessening the expence of labour, is undoubtedly preferable to the broad-cast, or hand method. The culture of this root is increasing every year; and it is now successfully practised upon many soils formerly considered as unfit for growing turnips. By employing a little attention, and sowing fields of different soils in the same season, there is not a doubt but that this branch of husbandry may still be further extended, which will serve to reduce the quantity of land hitherto kept under an unproductive fallow. The increased demand for butcher-meat holds out every encouragement for this extension; and another great inducement is, that the value of stock necessarily depends upon procuring a sufficient supply of green food for their support at every season of the year.

If turnips have produced important advantages upon the light, free soils, *Beans*, drilled and horse-hoed, have been found equally beneficial upon those of a different description. This pulse, which was but little sown in Scotland till the year 1770, unless upon the rich clays, has, since that time, been successfully cultivated upon all the heavy loams; and, in many farms, now constitutes a regular branch of rotation. With a few exceptions, beans are constantly drilled at intervals of 20 or 27 inches; the latter mode is most prevalent, which admits the ground to be ploughed with a horse, in the most sufficient manner. Very little hand-hoeing is given, nor is it required; as the kind of land most adapted for their growth, and upon which they are commonly sown, is not naturally disposed to the growth of annual weeds; and fine crops of wheat generally follow, provided due attention has been paid to working the bean crop. The necessity of Summer fallow,

low, which, under the present rate of rents, and value of labour, is an expensive affair to the farmer, is consequently much lessened; for, if land is once thoroughly cleaned, and afterwards kept in a regular course of leguminous and culmiferous crops, alternately, it will remain in good order for a considerable number of years.

The *Potato*, which, during the 17th century was considered as an article of garden growth, has, for fifty years back, been extensively cultivated in the fields; and is now the chief crop employed, in the vicinity of great towns, for cleaning the ground. Though this root forms a principal part of the food of the lower ranks, and consequently deserves every mark of attention, yet the raising of it, in an agricultural point of view, cannot be considered as equally beneficial to the farmer with turnips and beans. It is only upon light soils that they can be cultivated with propriety; and, in such situations, the land is better cleaned by turnips, which are sown at a later period of the season. In fact, this esculent root can never enter into a regular rotation, as the demand is limited; but every farmer cultivates less or more, for the use of his family and servants.

Inclosing and *Draining* of land have also been of much advantage in facilitating improvements; and the advantages of both are evident to the most superficial observer. If a farm is not inclosed, the farmer can hardly be considered, in many cases, as being master of his possession; and, without the operation of draining, the full advantages of good ploughing and manuring cannot be attained.

In the progress of these important improvements, much assistance has been gained from the liberal system of connexion which has long subsisted betwixt the great majority of landed proprietors and the tenantry; which has contributed not only to promote the solid improvement of the country, but has also been attended with beneficial effects to those immediately interested. Long leases, free from arbitrary restrictive covenants, have formed a prominent feature in this liberal system; without which encouragement, notwithstanding of every other advantage, the husbandry of Scotland would not, at this day, deserve to be distinguished as eminently improved.

The elucidation of these subjects will occupy the future numbers of the Rural Inquirer; and any hints or information, from persons versant in the practical husbandry of Scotland, will be received with pleasure.

R.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

GENTLEMEN,

Agreeable to my promise, I send you another Paper upon the Flax Husbandry, which, I trust, will be acceptable to your Readers. The climate and practice of Ireland being nearly allied to the climate and practice of this country, it is hoped that this communication will be found of greater utility to the Growers of Flax, than the elaborate, and in many respects valuable Report of Mr Consul DURNO, *respecting the Prussian, Russian, and Polish Husbandry, inserted in your last.*

I am, &c.

N.

On the Culture, &c. of Flax, from the Practice of Ireland.

A good crop of flax may be expected from any strong clays which are fit for the growth of corn. Potatoes are generally the crop which precedes flax; but turnips, beans, or any manured crop, may be considered as good preparatives. It is essential that the ground should be in fine tilth, and as free from weeds as possible. Light stubble lands, especially such as have been long in tillage, may, by proper preparation, bring a crop; but are not proper for the culture of flax, as the crop seldom comes to maturity. The stalks, before they are fit for pulling, turn to a reddish colour, called *firing* in the north

north of Ireland; which disorder not only lessens the quantity, but injures the quality of the flax, in every process of the manufacture.

In this case, they are generally obliged to pull the flax at the first appearance of the blight. If this is neglected till a blotch is seen on the stalk, the crop is scarcely worth manufacturing, as no art in bleaching can bring the cloth made of it to a proper colour.

N. B.—No chalk in Ireland, and very little sandy soil. Such lands would probably be liable to this imperfection.

About two bushels of seed to the English acre is a proper quantity, except for the purpose of a very fine manufacture. For this purpose, the flax is to be pulled in a very green state; and four bushels to the English acre are in that case necessary. A sure method of trying the quality of the seed, is, by sowing some in a hot-bed. The most approved season for sowing, is the first fine weather after the middle of March.

The best mode of tillage is in beds about six feet broad, covering the seed about an inch and half deep, with what earth may be shovelled out of the furrows.

These furrows are useful in carrying off under-water, and in giving air to the crop during the growth. But the tops of the ridges should not be laid round, as that would carry off the Summer rains too quickly. Before the flax is five inches high, it should be carefully hand-weeded; and, if any part lodges, it should be turned over, as is often necessary with respect to barley. And, in general, during the growth of the crop, as much care as possible should be taken, to preserve the plants in an even state of growth, which will be found of great advantage to the manufacturer in every future process.

The produce may be estimated, on an average, at about seven pounds Sterling the English acre.

The crop should stand till the lower part of the stalk gets a yellowish cast, and the under leaves begin to wither, except when the flax is designed for an extraordinary fine manufacture, or a blight or firing has made its appearance on any part of the crop; in which case, it will be better to pull it in a green state.

It will be worth attending to, in the pulling, to take all the ripest and strongest grown flax first; and, leaving it in small handfuls across each other, but with the ends containing the seed towards the south, to proceed to pull that of an inferior growth. By this means, the crop receives a sorting, in the first instance, which will be conducive to the perfection of the manufacture in every future part of the process. The weeds must also be carefully taken out of the handfuls, and the dirt shaken from the roots.

Immediately after pulling, the flax may be steeped, (unless the seed is to be preserved; in which case, it is to be rippled, or dragged through a sort of iron comb, to take off the seed pods); and the quality of the water is so far essential to the perfection of the manufacture, as to deserve particular attention.

Turf bog water, which is not muddy, is found to answer very well for this purpose; but foul stagnate water gives a stain to the flax which can never be bleached out. Too pure a spring, or sharp running water, limestone waters, or those impregnated with a mineral acid (which is easily known, by their turning black with a mixture of galls), are equally injurious. The best water is that of a reservoir dug in clay, or the sides of which are lined with clay.

Such a reservoir, 4 feet deep, which it should not exceed, 6 broad, and 40 feet long, will contain the produce of an English acre. The water should stand in this reservoir about a fortnight before the flax is put in, which must be evenly stored, in sheaves loosely tied, that the band may not prevent the effects of the water on that part.

The root ends should stand highest, and the whole must be perfectly immersed, and kept down by bundles of straw, or hurdles, as all that is above water will be stained. The time it is to lie in the steep, depends on the soft quality of the water, and the state of the weather. In good water, and warm weather, four days produce the effect, which, in other circumstances, does not happen under twenty. But it is safest to examine the flax on the fourth day. After steeping, it should be spread, even and thin, on fine grass ground. For this purpose, *aftergrass* is much recommended;

recommended; but, if the grass grows through the flax, it must be constantly turned over.

It is not easy to ascertain the time the crop should lie in this bleaching state, which is intended to produce an even separation of the rhind from the case of the stalk. It is best to have it examined, from time to time, by the flax-dresser, who is most concerned that it should come in a proper state to the beetle or break. It is observed, however, that a good exposure to the sun renders less fire necessary to prepare the flax for a future process: if it is not sufficiently dried on the ground, which is seldom the case in Ireland, it is then put over hurdles, and dried with a gentle fire till it is fit for beetling, skutching, and the other operations of the flax-dresser.

In consequence of the appointment of the Honourable Board of Trustees, we, the Surveyors of Flax-raising employed by them, having met together, and maturely considered a paper, containing an abstract of the rules practised in Ireland for the cultivation and dressing of flax, transmitted to the said Board by the Lords of the Committee of Council for Trade, beg leave to offer our report and opinion thereon, as follow:

1*st*,—*As to the Soil proper for Flax, and the Preparation for the Crop*,

We consider, and have found, from experience, that an open, black, loamy soil, enriched by having lain long in pasture, and broke up by proper tilth, is preferable to a clay soil, or any other we are acquainted with; and that either on the first or second crop after pasture, which we have always found much better than after potatoes, turnips, or beans.

2*dly*,—*With regard to the best Mode of proving the Goodness of Seed*,

We agree with the writer of the paper, that the best method of trying the quality of seed, is by sowing some in a hot-bed. But it should be observed, that this is by no means a criterion that can be depended on, and therefore

fore it ought to be recommended with caution. For we find, that even bad seed, if not altogether damnified, will vegetate, and make a promising appearance in a hot-bed.

3dly,—Method of covering the Seed, and utility of laying the Land in six-feet Beds.

We are humbly of opinion, that the mode here recommended, may certainly be of great utility in wet boggy ground, for draining it and bringing it into tillage: But we cannot by any means approve of it for land on which flax is to be raised in general; because, in Scotland, and, as far as we know, in England too, the lands are generally laid out in ridges from 12 to 18 feet wide; which method is much less expensive than the making of narrow ridges, and is better calculated for crops of every kind. It is also to be observed, that the frequency of drains, occasioned by these narrow ridges, must deprive the land too much of its proper moisture.

And as to the covering of the seed, we would recommend brush harrowing, followed by a complete rolling, in preference to the mode suggested in the paper, which we are afraid would be found much too expensive.

4thly,—Any part of the Flax not under Water will be stained, &c.

We have some difficulty in agreeing to the rule here suggested, that the root ends should stand the highest; for this reason, that the crop end of the flax being composed of the smallest fibres, require more watering than the other ends; and it is well known, that as the water is warmest and softest near the surface, it operates the more forcibly. The general practice in Scotland is, to place the root ends undermost.

Lastly;—The more Sun the Flax gets, the less Fire necessary before Beetling.

In preference to the method here suggested, of drying the flax on hurdles, or any other way of applying fire to it, in order to prepare it for skutching, we would recommend

mend drying in an oven heated with the refuse of the flax, and so very moderately, that a person may easily stand in it. There the flax should be allowed to lie just long enough to take off the acquired damp; and in this way, the damp is removed more equally and safely than by any other means; and the flax is hereby rendered more fit for every after operation.

The foregoing are the only remarks which we have to offer, concerning the rules suggested in the foresaid paper. We consider those upon which we have not made any remarks to be unexceptionable, and that the publication thereof may be of utility to the raisers and dressers of flax in Great Britain. At the same time, we think it our duty to say, that, as a complete system of flax culture, we cannot look upon it to be altogether so satisfactory as it might be made.

All which is humbly submitted by, &c.

[Signed by four Surveyors.]

FOR THE FARMER'S MAGAZINE.

Hints to Farmers.

I REMEMBER to have heard a little story of the father of the present envoy of Britain in America, that contains in it much of the crambo of our employment. Mr Liston was a respectable farmer on the estate of Dundas in West-Lothian, and very successful, by diligence in his operations. One day the Laird, walking pensively out of a morning, met and accosted his worthy tenant thus: "Robert, I see every thing right and thriving about you. How comes it that you succeed so well, paying a good rent, when I, who am laird on my own farm, and pay no rent, find it even a losing business?" "Why, Sir," said Liston (after some pause), "the difference between your honour and me is just this: When you go to bed at night, you say to your overseer, tell them to do this or that to-morrow; but I am first up in the morning, and I say to my lads, Come, sirs, and let us set on to purpose! I keep the key of my

my barn under my bolster, and nothing is too small for my attention."

This is the first lesson to farmers, on which it is needless to enlarge.

I remember another story relating to farming. When Cockburn of Ormiston, Scott of Duninauld, and Lord Kames, had first set the proprietors in Scotland to think of scientific farming, and the learned Professor Francis Home had enriched the art with authentic principles in the philosophy of vegetation, a Scots laird, full of theory, but deficient in practice, was bragging to one of his principal farmers of his knowledge, and laying down with emphasis the chimerical analysis of soils and manures, and had at last come to the end of his harangue, with a—"Well, Sandy, what think you of this? how do you manage your farm?" "Why, really, Sir, and please your honour," said Sandy, "I am as ignorant as the child unborn of all that you have said. My only scheme has been, to make my farm dry; to make and keep it clean; to muck it well with good and clean dung; sow it at a right time with principal and *well liquored seed;* keep the vermin off my corn, and take it off the ground when it is perfectly ripe. Indeed, Sir, I have little more to say; your honour has inclosed all my land; I will never allow a gap in my fences, or a filthy weed to be seen in my land. I like a cann of good strong ale or cappy; but I hate whisky, and never loiter in public houses. I am sure your honour will not be angry at any thing I have said, as I am never a week behind with your factor at term-time."

This is the second lesson to farmers. B.

(To be continued.)

(The following Registers of the Weather, during the years 1782 *and* 1799, *have been sent us by an intelligent and respectable Farmer; and as the consequences attending these two fatal years have been nearly similar, we judge, a comparative view of the causes which occasioned them, will be interesting to our Readers. The further favours of this Correspondent will be highly acceptable.)*

FOR

FOR THE FARMER'S MAGAZINE.

Register of the Weather in 1782, *taken monthly, by a Farmer in the Vicinity of Edinburgh, and written without any intention, at the time, of being published.*

January.

COLD rainy weather, with very boisterous winds from the S. W. Little snow.

February.

Either snow, cold rains, or boisterous winds, the whole month. Little work done.

March.

Excessive frost, much snow, or great rain, with cold E. winds from beginning to end. Labour far back.

April.

A very wet and cold month; wind constantly in the E. It was near the middle before the sowing was generally begun.

May.

Began very cold, and continued so till the 15th, when it commenced an excessive rain; and although the air became milder, labour was put a stop to for eight days. The 23d was heavy rain, beyond any thing in remembrance. The *bear land*, of course, greatly damaged. Wind always E.

June.

Attempts were again made, in the beginning of this month, to sow the barley; but repeated floods rendered it impracticable till about the 16th. Our barley seed was finished on the 18th. Some people in this neighbourhood continued to sow till the 24th. Many fields were left for fallow. The 22d, 23d, 24th, and 25th days, were remarkably warm. The snow lay on the hills N. W. of Stirling till the 22d.

July.

Fine dry weather till the 27th; then mild showers till the end. Wheat shot about the beginning of the month.

Roses

Roses blown on the 5th. Peas bloomed on the 15th. Barley and oats *shot* on the 20th.

August.

Very inconstant weather, but generally cold and rainy. An exceeding high wind on the 25th, which, however, did little damage, the corns in general not being near ripe. Two or three days in the end were dry and warm. A small field of wheat cut down on the 28th near Stockbridge. Very few peas full, but many in full bloom by the end of this month.

September.

Tolerable good weather the first three days, then thick fogs succeeded by cold E. winds until the 15th, when a heavy rain came on, which lasted three days. From thence cold dry weather, with high wind from the W., and rain alternately till the end. Began to shear on the 5th; left off from the 14th to the 23d; and again, on the 28th. For want of ripe corn, had no oats cut all this month. Many farmers, within two miles of Edinburgh, did not begin to shear till the 19th; and at five miles distance, did not shear at all during September.

October.

In general dry, but cold weather until the 19th, when, after most boisterous wind, there were heavy rains, frost, or snow, to the end. On the 30th, the snow lay two inches thick all over Mid-Lothian; a circumstance, however alarming it might be to the country people, on account of the crop, at that time nearly all out in the fields, and much of it to cut down, was an occasion of exultation to the newsmen, who had all along prognosticated a crop; and who very sapiently remarked, that, by means of the frost and snow, the public might be assured of ripe corn, which otherwise, they now confessed, was very much to have been doubted.

November.

Very hard frost till the 14th; from that to the end, fresh and frost alternately. This was a very busy harvest month. Many farmers, even within two miles of Edinburgh, had a great deal to cut down. We were all cut down

down on the 6th, and *led in* on the 18th. Near a half of all the potatoes in the country were destroyed by frost, and a great proportion of the oats rendered unfit either for meal or seed. Many heated stacks. The wheat seed, however, was got pretty well through in the course of this month, and in tolerable good order.

December.

Began with hard frost, and was frost and fresh by turns during the whole month. The wheat seed finished by the end of the month in very good condition, there being no snow in the low part of the county.

Weather Register on the same Farm during the Year 1799.

January.

In general, mild fresh weather, with some heavy winds from the west, only seven days rain in all, but some hard frost in the end of the month. Labour carried on pretty well.

February.

The first eight days hard frost throughout. On the night between the 8th and 9th, a storm of snow came on from the S. E., which lasted with unremitting violence for twelve hours. It was utterly impossible to do any work in the fields, hardly practicable even within doors, as the snow drifted through every thing. Many sheep smothered in the snow. From this to the 16th, fresh and frost alternately; and from thence to the end, in general, mild fresh weather, and the ploughing going on briskly.

March.

The first twenty days in general mild fresh weather, and a great deal of work done, particularly in the *oats seed*, which was nearly finished during this period. From the 20th to the 28th, exceeding cold damp weather. The last three days heavy snow and hard frost.

April.

April.

Began with frost, and continued almost insufferably cold to the 15th; on the 8th, there was a great fall of snow. From the 15th to the end, fair and foul by turns, but on the whole cold, labour far back, no vegetation.

May.

1st, A continued rain. 4th, Thick ice. 6th, Began to plant potatoes three weeks behind the usual time. 7th and 8th, Continued rain. 9th, Fair. 10th, 11th, 12th, and 13th, Uncommon heavy rain. *Bear land* and potato ground greatly damaged, the water in all the rivulets overflowing, a great *speat*. 18th, *Spring* appears now to be begun; from this to the end, in general fair but cold weather, few trees have yet the leaf out. Saw a swallow for the first time, on the 10th, being about two weeks later than usual. Heard the cuckoo for the first time on the 28th.

June.

1st, Very cold wind. Old snow still on the muirfoot hills. 4th, An exceeding rainy day. From this to the 9th, warm weather. 10th, Very cold; people again drawing to their great coats. The hay lands looking miserable; yet wheat and other grain not amiss, pasture very good. 15th, The whole gardens have still the *flourish* in full splendour, eight weeks behind the usual time. Snow on the hills N. W. of Stirling; from the 15th to the end, in general warm, with several refreshing showers. People sowing barley to the 15th; wheat in early places beginning to shoot by the 26th. The potatoes have failed in many fields, and of course given up to Summer-fallow or turnip; also many intended fields of *bear land*.

July.

In general, fine warm growing weather, with the exception of the 4th, 12th, 18th, 19th, 23d, and 24th, in which there was much rain, attended with great cold. Delivered *new* hay on the 11th, perhaps the first in the county. The crop appears, in the end of this month, to be much more forward than was expected, and also seemingly better, hay only excepted, which is very thin indeed, never having recovered the cold in April and May.

August.

August.

A sad month this for the husbandman; there being not less than sixteen days of heavy rain, of which, that on the 17th, 18th, and 31st days, was almost beyond example excessive. The 23d was in an equal degree destructive, from the wind being tremendously high from the west, doing damage to every crop, particularly to the potatoes, which never recovered the shock. Very little appearance of harvest, and the crops greatly laid, and out of order, having been in a considerable degree luxuriant previous to this. Turnip land (unless in very dry soils) all gone wrong, as well as the fallows. Great accounts, however, of the crop in the newspapers, and, as usual, a bountiful prognostication of plenty!

September.

In general, pretty fair weather till the 12th; when it began to rain, and lasted, with little intermission, ten days. Sunday the 22d was an exceeding cold stormy day; but, from this to the end, remarkable fine harvest weather. All the neighbourhood of Edinburgh were shearing on the 23d, but very few before that; and a great deal of work was done. Shearers, although dearer than usual, were to be had in abundance. No shearing, however, in the muirlands all this month. It was universally remarked, that, however bulky the crop appeared, it was cut down with comparatively little trouble; the straw, being soft, gave little resistance to the hooks; and, in fact, was bound up into less bulk than its appearance indicated. The second crop of clover having very generally failed, many farmers were under the necessity of eating up, with their farm-horses, that stock of hay which would have otherwise gone to market; and several fields of peas went also to the same use; which was, in fact, only consuming fodder, as there was very little grain on that description of crop.

October.

1st, An uncommon fine day; 2d, fair till noon, then rain; 3d, a stormy cold day, few of the shearers could keep the field; 4th, exceeding bitter cold blasts; 5th, a fine work day; 6th and 7th, rain throughout; 8th, 9th,

and 10th, fair; 11th, rain; 12th to 17th inclusive, fair; 18th, hard frost; 19th, fresh wind; from this to the end, good harvest weather, with the exception of frosty mornings. Very little wheat yet sown; The greatest part of the country being still in the throng of harvest. Corn turning very ill out in the barn-floor, and at the mill; wheat worst of all.

November.

In general fair, with frosty mornings, till the 20th; then raw damp weather, till the end; and the 30th, a day of rain throughout. Though this has been a very busy harvest month, yet it is not concluded: particularly in the muirlands, where they have still to *reap*, as well as to *lead in*. Very little wheat yet sown, and none in good condition. The prices are getting up fast, in proportion as it is more and more known that the crop is deficient. Even the newsmen are almost convinced that the crop is not *so very immense* as they predicted; but, in compensation for the error they have done every thing in their power to lead the public into on this subject, they are from day to day issuing out many sage advices to the farmers, how to manage their stacks of corn, how to save, and how to sow: all which will no doubt meet with the deserved attention.

December.

Dull heavy weather (though not much rain) till the 17th; when frost and snow set in, and continued with considerable severity till the end. Many fields of muirland corn still *unled*. Even within 3 miles of Edinburgh some barley uncut; but this not to any great extent. Very little wheat sown this month.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Sheep and Great Farms favourable to Population.

GENTLEMEN,

AFTER having heard so much clamour raised against the substituting of sheep for black cattle in the Highlands, and against great farms in general, as having an effect

fect to depopulate the country; it is not a little curious, that the direct contrary is the truth, as now completely ascertained from the recent numeration of the people by Sir John Sinclair, in the Statistical Account of Scotland, compared with a similar muster by Dr Webster in 1755.

Thus, in the extensive Highland counties of *Argyle*, *Inverness*, and *Ross* (the districts, of all others, wherein sheep have been more extensively introduced, the farms more enlarged, and from whence, on these accounts, the greatest clamour has been raised), the population in 1755 was 170,440: yet, in spite of the alleged depopulation, from sheep and great farms, the number of people in 1792-8, is 200,226; being an increase, in the short period of about forty years, of 29,786, from a territory possessing almost neither towns nor manufactures, hardly even agriculture, strictly speaking; the whole being, in general, a pastoral country, applied almost exclusively to the rearing and feeding of stock.

In like manner, the counties in the south of Scotland, *Berwick*, *Roxburgh*, *Dumfries*, *Kircudbright*, and *Wigton*, where flocks of sheep have increased much, as well as the size of farms, the population has also been augmented considerably. Thus, in 1755, the number of people was 135,183; it is now 163,166. I do not here state the vast increase of population that has, in the same period, taken place in the counties of *Ayr*, *Renfrew*, and *Lanark*; as in these it has, in a considerable measure, been owing to the increase of towns and manufactures, neither of which have had much effect in the counties first mentioned.

But this is not all. *Population is on the* DECREASE, *where the farms are still small, and the number of sheep inconsiderable!* Thus, in the three contiguous counties of *Aberdeen*, *Banff*, and *Elgin*, still remarkable for small tenantry and diminutive flocks, the population in 1755 (exclusive of the city of Aberdeen) was 172,225; it is now only 163,261! Can any stronger evidence be required?

One would have thought the bare fact, that Scotland has increased in population, in the course of forty years, from 1,265,380 to 1,527,892, would have convinced

every impartial person, that the enlargement of farms and the increased number of sheep, (which has only been remarked during the same period), have had no tendency to depopulate the country; a fact, of which every impartial person is convinced: But this, nevertheless, has not prevented the prejudiced or the ignorant from raising a great outcry against sheep and great farms; and, once prepossessed on the subject, it is possible they will continue to shut their eyes on every evidence offered to undeceive them.

How it came to be supposed, that sheep, which demand an unremitting attention, should yet require fewer people to manage them in the Highlands than black cattle, which roam at large on the hills, for several months together, uncared for, or at least unattended to, is not to be accounted for. The fact, however, that the country has increased in population, in proportion as the sheep have increased in number, (affording more employment, as well as more food), appears to be completely ascertained. The same beneficial consequences appear also to have ensued from enlarging the farms, (to the limited extent in practice in this country); for although the number of actual farmers has thereby been diminished, yet more people have been employed in the works of husbandry, from the more improving system of operations which takes place, (which also sends more food to market); while, at the same time, the labourers themselves are, in a greater proportion, *married* people: as the man who farms on a large scale always finds it his *interest* to employ such, in preference to young men or boys, the usual population on little farms.

February 20th, 1800. H.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Premiums offered by the Board of Agriculture, for 1800.

No. I.

To the person who shall draw up, and produce to the Board, the best, simplest, and most practicable plan, for ameliorating

ameliorating the condition of the labouring poor of this kingdom, by alterations in the poor laws, of easy execution, and without materially increasing poor-rates——*the Gold Medal.*

To be produced to the Board on or before the first Tuesday in March 1801.

No. II.

To the person who shall build on his estate the most cottages for labouring families, and assign to each a proper portion of land, for the support of not less than a cow, a hog, and a sufficient garden——*the Gold Medal.*

Accounts of the expences of building—land assigned—culture, if any—live stock, and state of the families, with the rent paid—verified by certificates, to be produced to the Board on or before the third Tuesday in April 1802.

No. III.

Doubts having been expressed by some persons concerning the expediency of cottagers keeping cows, except on rich soils, the Board will give to the person who shall produce the most satisfactory account, verified by experiments, of the best means of supporting cows on poor land, in a method applicable to cottagers——*the Gold Medal.*

Accounts to be produced of the soil—articles cultivated—produce—stock kept—and every material circumstance—verified by certificates, on or before the first Tuesday in May 1801.

No. IV.

To the person who shall make the most satisfactory experiments tending to the improvement of the culture of each of the following plants, respectively, viz. wheat, rye, barley, oats, peas, beans, tares, buck-wheat, turnips, cabbages, roota-baga, potatoes, carrots, parsnips, clover, lucerne, sainfoin, chicory, hemp, flax, hops——*the Silver Medal.*

Accounts, verified by certificates, to be produced on or before the second Tuesday in May 1802.

The same Premium for 1803.

No. V.

To the person who shall draw up, and lay before the Board, the best memoir on the means of obviating the objections which have been made to a general enclosure act, in such manner as to facilitate such a measure, whenever it may be had recourse to——*the Gold Medal.*

To be produced on or before the third Tuesday of January 1801.

No. VI.

To the person who shall draw up, and produce to the Board, the most satisfactory memoir on the best means of preventing future scarcities——*the Gold Medal.*

To be produced on or before the second Tuesday in March 1801.

No. VII.

To the person who shall build and describe to the Board, the cheapest cottage, being at the same time durable and comfortable——*the Gold Medal.*

A plan, elevation, and account of the materials and expence, verified by certificates, to be produced on or before the first Tuesday in May 1801.

No. VIII.

To the person who shall invent and execute, in a manner applicable to a common use, the best and cheapest substitute for leather, in the shoes of the labouring poor, being an improvement on any that may at present be in use——*the Gold Medal.*

A pair of shoes, with an account of the materials and expence, to be produced on or before the first Tuesday in December 1800.

No. IX.

To the person who shall, through the entire Summer of 1800, keep the greatest number of cattle in stalls, houses, or confined yards, and fed entirely in the soiling method, with green food——*the Gold Medal.*

Certificates of the number of cattle, and acres of food, and sorts eaten—the quantity of dung made, with other circumstances of the experiment—to be produced on or before the first Tuesday in December 1800.

The same Premium for 1801.

No.

No. X.

To the person who shall improve, and bring to the annual value of not less than 10s. an acre, the greatest numbers of acres heretofore waste, not less than 50—*the Gold Medal.*

Accounts of the improvement, verified by certificates including the state of the land before the experiment, and of the cultivation, expences, and produce, to be laid before the Board on or before the first Tuesday in March 1803.

Notice of the intended improvement to be sent to the Board.

No. XI.

To the person who shall lay before the Board the most satisfactory account of Mr Elkington's drainings——*the Silver Medal.*

The soil and state of the land before draining, the method and expence of the improvement, with a plan, the result of the operation, to be produced on or before the second Tuesday in December 1800.

No. XII.

To the person who shall, by a series of the most satisfactory experiments, ascertain the comparative advantages and disadvantages of folding sheep——*the Gold Medal.*

Accounts, verified by certificates, to be produced on or before the first Tuesday in April 1803.

No. XIII.

To the person who shall, in a country where irrigation is not generally in practice, water the greatest number of acres, and in the completest manner——*the Gold Medal.*

Accounts of the old and new state of the land and value, the method, expence, and produce, verified by certificates to be laid before the Board on or before the third Tuesday in January 1802.

No. XIV.

To the person who shall make, and report to the Board the most satisfactory experiments on the comparison of horses and oxen, in the general business of a farm——*the Gold Medal.*

The account, verified by certificates, to be produced on or before the last Tuesday in April 1803.

No. XV.

To the person who shall, from authentic documents, and actual enumeration, report to the Board the most satisfactory account of the houses, and the present and past population, of any hundred, district, wapentake, or division of country in Great Britain, containing not less than ten contiguous parishes——*the Silver Medal.*

To be produced on or before the last Tuesday in April 1801.

No. XVI.

To the person who shall give the most satisfactory account, verified by experiments, of the effect of ploughing in green crops for manure——*the Gold Medal.*

Accounts, with certificates, to be produced on or before the first Tuesday in March 1802.

No. XVII.

Potatoes and wheat, in constant succession, being the course of crops which affords the most abundant food for man, the Board will give to the person who shall make and report the most satisfactory experiments, on not less than five acres cultivated in that course during four years ——*the Gold Medal.*

Accounts of the soil, culture, produce, application, or price, verified by certificates, to be produced on or before the first Tuesday in May 1804.

The same Premium will be given (but not to the same person) for the same account of six years.

Accounts to be produced in May 1806.

No. XVIII.

To the person who shall lay before the Board the most satisfactory account, verified by chemical experiments, or other sufficient authorities, of the nature of manures, and the principles of vegetation——*the Gold Medal.*

To be produced on or before the Tuesday in December 1800.

No.

No. XIX.

To the person who shall lay before the Board, the most satisfactory account of the application and effect of manures, verified by practical experiments, on not less than one acre for each sort of manure——*the Gold Medal.*

To be produced on or before the first Tuesday in December 1802.

No. XX.

To the person who shall lay before the Board, the most satisfactory paper on the means of ascertaining the probable state of the weather, so as to furnish useful information to the husbandman——*the Silver Medal.*

To be produced on or before the third Tuesday in May 1801.

No. XXI.

To the person who shall give the best account, with drawings, of the various instruments of husbandry——*the Gold Medal.*

To be produced on or before the first Tuesday in April 1801.

GENERAL CONDITIONS.

1. The Board reserves to itself the power of withholding any premium, when the communication or communications are not deemed sufficiently important to merit the reward.

2. The MS. &c. sent in claim of Premiums, to remain the property of the Board.

3. All memoirs, &c. sent in claim of Premiums, to be without names; with a mark or number; and accompanied with a sealed letter, on which is written the same mark or number, and containing the name and address of the claimant; not to be opened unless the Premium is adjudged to that mark or number.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Query concerning the Quality of Straw.

GENTLEMEN,

WHETHER is the straw of a thoroughly ripe crop, or one win in the juice, the best fodder for beasts? Some affirm, that the weather productive of full corn, must be productive of feeding straw; while others, reasoning from the similarity to hay, argue for straw made in the sap.

The 1798 and 1799 brought forth straw of these opposite descriptions, and should, by the contrast in their nutritive effects, conclusively decide the point, if farmers have accurately compared the different condition of beasts fed upon straw for these years. Yours, &c.

H.

Remark by the Conductors.

The above query appears very fairly put, and we apprehend, there can be but one opinion respecting the answer, viz. That the straw win in the juice must be the best fodder. We cannot, however, consider the quality of the straw produced in 1798 and 1799, as competent evidence to determine the point; as both ripe and green straw, of the latter, were essentially different from that of the former year. The straw of 1799 never possessed equal substance with that of 1798, because it had not the benefit of so much sunshine, and, from the severity and wetness of the weather, was deprived of the greatest part of its juices long before it was ripened.

N.

FOR

FOR THE FARMER'S MAGAZINE.

Letters from a Scots Farmer, during a Tour through England, to his Friend in Edinburgh.

LETTER II.

AFTER enjoying a good night's rest at York, we set off at five o'clock, in a fine June morning, for *Tadcaster*. We passed through a delightful country, inclosed on every hand. The sun shone bright; the air was mild and serene; and every circumstance contributed to render the time employed in travelling this short stage exceedingly agreeable.

Tadcaster is not a large place, nor does it contain any manufactures; but the soil of the adjoining country is mostly of excellent quality, which is in general kept under good cultivation. We only halted here for a few minutes, and then proceeded to Ferrybridge, where we breakfasted.

Betwixt these two places, lies the estate of a worthy nobleman, who justly considers the science of Agriculture as meriting equal legislative attention with trade and manufactures, and who wisely devotes a considerable part of his valuable time to the management of rural affairs. We saw several of his improvements, which were conducted according to the strictest rules of art, and received accurate accounts concerning those which did not come under our observation. Instead of trifling away his time in the cultivation of a few acres, he carries on his operations upon the great scale, and intends, at a future period, to arrange his estate in the shape of regular-sized farms, which was not the case when he entered to possession. Happy would it be for Britain, were all the great proprietors of land disposed to view the cultivation of the soil in a similar manner with this noble personage! Agriculture would then advance with hasty steps to perfection, and the capital stock of the country would be improved to its greatest height.

Ferry-Bridge, being one of the great stages upon the north road, is chiefly occupied by innkeepers. At this place we received information concerning the *River-Aire-Navigation*, which is the most profitable undertaking of the kind in England. This navigation was originally planed and executed in the reign of Charles I., and has since been

been gradually extended, by the aid of canals, so as to admit of communication with almost every part of the kingdom. Yorkshire possesses the full advantage of water carriage. Indeed, without it, the valuable manufacture of the West-Riding could hardly be carried on. It gave us pleasure to learn, that the adventurers were, upon the whole, handsomely repaid.

The soil hereabouts is all incumbent on limestone, and large quarries of this valuable mineral are wrought in the neighbourhood of Ferry-Bridge, which, after undergoing the process of calcination, is transmitted by water carriage, over the whole of this large and valuable district. The husbandry of the county, respecting its application, appears however, very imperfect; and I am inclined to think, that much of it is used, not from a conviction that it will produce beneficial consequences, but merely because the tenants are taken bound to lay on a certain quantity each time their land is fallowed. As two crops, or at most three, are only allowed to be taken after one fallow, and as the arable lands are generally kept constantly under the plough, it necessarily happens, that lime is often applied when the ground is exhausted, or when it is in an improper condition for receiving benefit from calcareous manures. The money, therefore, expended in the purchase of this article, must, in many cases, be considered as misapplied, which would not likely happen, were it left to the judgment of the possessors, how often, and to what extent, the soil required the application of such a stimulus.

It will be generally acknowledged, that the most beneficial mode of liming land, is, to give a sufficient dose at once, when the soil has been enriched by a quantity of dung, or has been recently refreshed, by remaining several years in grass, which precludes the necessity of a repetition for a considerable number of years. The old grass lands of Yorkshire would therefore be a fine subject for the operation of this article, which is justly regarded as the basis of good husbandry; while the lands presently in aration would be equally benefited by throwing them into grass. It is evident, however, that these things cannot take place, till the nature of the connexion betwixt landlord and tenant is materially altered; for, under the present system, it is highly improbable that any such improvements will be practised.

The

The errors of the Yorkshire *lime husbandry*, may justly be attributed to the restrictive covenants imposed by the proprietors, and not to any fault of the tenantry, who are seldom allowed the exercise of their own judgment in such matters. It is impossible that these covenants can be regulated with such propriety as to meet every case; therefore, it may safely be admitted, that when the tenant is taken bound to fallow every third or fourth year, and to dress that fallow each time with a certain quantity of lime, that the fallow is often repeated, when the condition of the ground does not require it; and that lime is often bestowed, when circumstances prevent it from proving in the least degree beneficial. The proprietors seem to consider the tenant as very ignorant of practical knowledge, otherwise they would not hedge up their management with numerous rules, mostly inapplicable to the present state of British husbandry, and consequently deserving to be proscribed as obsolete, and improper to be executed. I have heard many excuses for such instances of arbitrary interference; but few are of a nature calculated to produce conviction. If a farmer does not know when his land is to be benefited by the application of lime, he is not fit for the post he occupies.

Pontefract, which lies a few miles westward of the great road, is surrounded by fine fields of deep loam, wherein liquorice and nursery articles are raised to a considerable extent. A large corn market is held here, which is attended by a number of respectable farmers, and the grain presented for sale was generally of excellent quality.

This part of Yorkshire makes a respectable figure in husbandry; and very few of the fields appeared to be unproductive, unless it be those called common, or not held in severalty; of which more afterwards. Not much plain fallow is to be seen, and turnips are cultivated upon the great scale. The broad-cast method is usually adopted, which I must consider as much inferior to the northern custom of raising them in drills, both in respect of expence, and in the degree of cleaning given to the ground, which are points of the utmost importance.

Doncaster was our next stage, which is a stirring bustling place, and has large common fields in its vicinity. Some of these fields contain as fine soil as ever I examined;

ed; but their tenure and cultivation necessarily preclude a rent from being paid proportional to the intrinsic quality. Common fields have but lately come under my inspection, and to a Scotsman they certainly must be a matter of wonder and regret.

Sheffield, the staple place for cutlery articles, is situated above eighteen miles westward from Doncaster. And here a circumstance occurred, which strongly marks the character of English tradesmen. Wishing to see a few of its valuable manufactures, we had procured a recommendatory letter to a merchant in the place, who, we were told, was well acquainted with such matters; and having delivered it upon our arrival, he accosted us with—'Pray, gentlemen, where do you come from?' We replied, 'From Scotland.' 'Sorry for it,' says he, 'for I can neither shew the manufactures to a Scotsman nor a Frenchman. You are come to carry off our inventions, I suppose.' It was to no purpose we assured him that we were country farmers upon a tour, to see the husbandry of the kingdom, and that we only wished to gratify a little harmless curiosity. 'It won't do, gentlemen. You are Scotsmen! sorry for it: can't shew you the manufactures. Good b'ye, gentlemen.'

From Doncaster to Newark-upon-Trent, the road is like a bowling-green for levelness; and no forty miles in England are travelled with greater facility. At Bautry we quitted Yorkshire, which, for magnitude, general value of territorial property, and extensive manufactures, undoubtedly surpasses every county in Britain.

Nottinghamshire was the next district through which we passed, and contains a great deal of what is called *forest soil*, very different indeed from what has lately come under our observation. The country upon the great road is more open, the fields more extensive, though, upon the whole, well cultivated, while wind-machines for grinding grain were working on all sides, which was a sure proof that circumstances were altered. A different system of husbandry seemed necessary than what was required in Yorkshire, and such was accordingly practised.

The husbandry of the upper part of *Lincolnshire* contained more disagreeable features than any we have hitherto examined; and the condition of an extensive common field near Grantham, was sufficient to provoke the most patient

patient agriculturist in the three kingdoms. To have such fine land lying in ridges and baulks alternately, the one half unproductive, and the other half waste, was such an instance of high treason against the good of the community, that the possessors deserve to be indicted as public nuisances to the State. To see what may be called the capital stock of the country, so grossly mismanaged, while the inhabitants are starving for want of provisions, surely calls aloud for legislative interference, without which no effectual remedy can be provided.

But ought the blame to be solely placed to the account of the possessors? or rather, Is not the supreme authority of the country censurable for not using the means of rooting out the causes which necessarily produce such abject and deplorable economy? Individuals may wish to reform the radical defects which prevail in the legal polity of the country, respecting the tenures or conditions upon which property is held and possessed, but very often the means are out of their power. A decisive act of the Legislature is necessary for correcting those evils, which must be founded upon liberal and public-spirited principles. If the interest of individuals should, in some instances, be sacrificed in consequence of such a strong measure, this affords no weightier objection than what may be urged against almost every road or canal-bill, or other bills for promoting improvement.

If an act of Parliament was passed for limiting the growth of grain in England, it could not be more injurious to the public good, than what is sustained in consequence of such immense and valuable tracts of ground being left in a common-field state. It must be remarked, that they are usually of the best kind of soil where they are situated. And the reason is obvious; they were first cultivated, and people would undoubtedly take possession of the most fertile spots, before they attempted to meliorate and improve those of a more sterile and obdurate nature. I was told, that some of these fields had been cultivated in a similar way for five or six hundred years, probably for a longer period; and that no deviation could be introduced into the customary courses of cropping, established in the different townships, without the express consent of every person concerned, unless an act of Parliament

ment is passed for dividing, inclosing, and holding them in severalty. Such fields are therefore kept under a perpetual round of crops, except that broad clover may, for a single season, be partially admitted. You may therefore judge what kind of crops are usually produced under such management.

Many Scotsmen are ignorant what a *common-field* is. When you mention such a subject, they imagine it is a piece of barren, whinny land, depastured with the cows of the neighbourhood, without reflecting that the term applies to the best lands in England. This tenure bears some affinity to our old run-rig fashion in Scotland; only that, since 1695, it was in the power of any single proprietor, to force a division of the premises, by applying to the Sheriff of the county, upon whom the execution of the law for dividing commonties, was devolved. It is owing to the want of a similar law in England, that such grievances exist; for it is evident, that the present mode of division is so vexatious and expensive, that one half of the commons will continue in their present state for ever, unless such a measure as I am recommending, is passed into a law. Indeed, there are much stronger reasons for a general bill, than existed in Scotland; for, in that country, the lords of the manor never possessed any thing like the extent of rights that are held by their brethren in England; and the burden of tithes, which in the former country was previously done away, absolutely debars every step to procure a division in the other, unless a previous bargain is made with the owners.

The very customs of the different townships, and the obstinacy and prejudice of the possessors, effectually prevent any material improvement being made, except with the unanimous approbation of every tenant of the township; and when we reflect upon the general perverseness of human nature, it may easily be supposed, that such a consent is very rarely gained. Instances are known where turnips have been sown upon the break customarily kept under naked fallow, and that the neighbours have turned in their beasts upon them, without being liable to damages; as also, where clover has been sown, instead of a corn crop, the stock of the township has destroyed it during the Winter months, without legal redress being procured.

Experience

Experience so fully proves the impolicy of keeping land in a state of commonage, that a wise Legislature would be justified in taking strong measures to annihilate such a tenure, however arbitrary the measures at first sight might appear.

As we advanced southward, we did not find husbandry practised in the perfect manner we expected, and common-fields were constantly occurring to our view, which were no better cultivated than those we had seen formerly. An old gentleman in company assured me, that he had travelled this road in 1751, and was not sensible of any alteration having taken place in rural economy since that period: The same remark will probably be made fifty years hence, if a division-bill is not passed. To observe a fine country so miserably managed, sickens the mind, and makes it turn from the scene with disgust.

At *Barnet*, we got into another climate, and the growth of every thing was further advanced than in any district we had passed through. Betwixt this place and LONDON, the hay crop was in hand; and the several processes of cutting, winning, and stacking, were going briskly forward. The crops in general did not appear weighty, not exceeding 150 stones per acre, and all of the kind called natural or meadow-grass. The smallness of these crops will not excite surprise, when it is considered, that the fields are so frequently cut, which as effectually scourges land as the severest course of corn crops. Very little land under the plough is here to be seen; and what came within our view, did not appear carrying heavier crops than what may be found in other situations, where the means of improvement are not so plentiful.

We have now entered the *great city*, where we will continue for a few days; and my next shall contain a detail of some of the wonders which come under our observation, though perhaps rather incongruous with the general purposes of these letters. And I am, &c.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

GENTLEMEN,

IF you consider what follows, as throwing any light upon your first query upon practical subjects, you are at liberty to make use of it.

The disease in wheat, called *smut*,* is perhaps more dangerous to that most valuable grain, than all other disorders united, to which, in this island, it is subject.

Though the cause of this destructive contagion will probably, like many other *arcana* in nature, for ever evade the feeble researches of mankind; the preventative, and even cure of the malady, is a simple process. A *complete* wetting with urine, or with a strong pickle of salt and water, and a drying with quick lime, I can, from twelve years *experience*, assert are a certain preventive.

A person, in whose accuracy and veracity I have every reason to confide, has assured me, that, by repeated washing with the above mentioned liquids, he, in one season, completely cured a quantity of wheat for seed, full of balls, and deeply infected with smut. I have also been informed, by that enlightened agriculturist, JOHN ERSKINE, Esq. of Marr, that a gentle kiln-drying of wheat intended for seed, and driving it twice through the fanners, immediately on being taken off the kiln, will prevent smut. The fanners must be driven smartly, and none of the light grain used for seed. This mode of prevention, Mr Erskine assured me, was successfully practised in the county of Clackmannan. Both these ways of treating seed-wheat are pretty generally known in North-Britain, particularly the former.

Unless wheat is sown within an hour and a half after being wetted with urine, it ought immediately to be spread thin upon the floor of a granary till quite dry, otherwise the powers of vegetation may be destroyed. If this precaution of spreading and drying be taken, the grain may be

* The miserable quackery and vague conjectures often attempted to be imposed upon the agriculturists of this country, as the origin of *smut* in wheat, and *curl* in potatoes, shall afterwards be submitted to the public.

be preserved for several months in perfect safety. This method of preserving wheat for seed, after being pickled and prepared for sowing, was communicated to me by an agriculturist, eminent in his profesion, and who had personal experience of the practice. I am, &c.

J. S.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On Drilling Beans.

GENTLEMEN,

As I observe you wish to receive communications respecting experimental agriculture, I do myself the pleasure of transmitting you the result of the first attempt made by me to cultivate beans according to the drill system, which was executed at a time when that important branch of husbandry was but recently introduced into this country, and, consequently, imperfectly understood.

I marked off an acre of ground, the soil a light free loam, which had carried a crop of oats the preceding year. It was deep ploughed in Winter, and received dung previous to the seed-furrow, which was given as shallow as possible, in order that the plants might have sufficient soil to strike down their roots. I divided it into three parts. Part No. 1. was drilled with intervals of 27 inches, or, in other words, the harrow followed every third plough. No. 2. was drilled after the second plough, which reduced the intervals to 20 inches, or thereby. No. 3. had intervals of the same breadth as No. 1.; but two rows stood together, or in each furrow, which gave me about the same number of drills as stood on part No. 2., and about one third more than part No. 1. They were sufficiently harrowed immediately before brairding, carefully hand-hoed afterwards, and, finally, bulked up with a neat double-moulded board plough, which performed the work in a very perfect manner. The crop at harvest was good; but, when cut, the stalk was smaller, and the pods not so well filled, upon those which occupied No. 2., as upon the other two divisions, where the intervals were wider, and

consequently a freer admission given to the air, which I have since found to be necessary in the culture of every article of the leguminous kind. When the crop was thrashed, I had one firlot more beans upon No. 1. than upon No. 2.; and No. 3. only returned me the same produce as No. 1. though it contained several more drills: besides, owing to the double rows, it was nothing like so well cleaned. The inferences which I drew at the time, and which have since guided my conduct in this branch of husbandry, were, 1st, That a certain portion of air was required to bring beans to perfection; and that the quantity to be procured, when the intervals were only 18 or 20 inches, was not sufficient for that purpose. 2d, That intervals less than 27 inches would not admit the full benefit of ploughing, which is a chief object in the drill husbandry: And, lastly, That double rows, with wide intervals, were not advantageous, as they neither returned a greater produce, nor allowed the ground to be so well cleaned as single rows.

I have, since the above trial, uniformly drilled beans upon a great scale, according to the first mentioned method, with this single alteration, that the hand-hoe is laid aside, and the whole operations performed by horse labour. The different ploughings are given with one horse, and are repeated according to the nature of the soil, and the dryness of the weather. This is the cheapest and most effectual way of cultivating beans; and indeed it is now very generally practised. I am, &c.

A Rural Economist.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Loose Hints on the Principles and Practice of Rural Science.

GENTLEMEN,

AGRICULTURE is an art generally practised with so little attention to principles, that a superficial observer may be led to conclude, it is incapable of being regulated by any

any thing like fixed and precise rules. If we turn our eyes upon the cultivators of the ground, we will discover, that the great body of the profession are rather influenced by custom and prejudice, than guided by rational motives; while, on the other hand, many scientific and enlightened men are as often defective in the practical department of this important art. The first class generally view theoretical knowledge with contempt; while the other is ready to place too much dependence upon it, and to neglect the solid and useful information to be learned in the school of experience.

I am inclined to think, that the conduct of both classes equally deserves censure; and that a good farmer must necessarily be intimately acquainted both with the principles and practice of rural science. Unless he is acquainted with principles, it is impossible for him to search after improvement; and, if he is unacquainted with practice, his knowledge can be of little or no real utility. It is evident, that every art will advance in direct proportion to the means of information possessed by those who are concerned in carrying it on; and experience fully proves, that, in every part of Britain, improvements have gone hand in hand with the progress of knowledge. Hence, the scientific farmer, if he bestows suitable attention to practice, will necessarily make a greater figure in his profession, than one whose knowledge is altogether limited to the operative branches of husbandry.

It is unquestionable, that a very great change has, within these few years, taken place in the character and conduct of British farmers; which promises to be of important service to the cause of agriculture in general. Instead of being taught to hold a plough, to drive a cart, or to sow (which, in former times, were considered to be the only qualifications necessary for a farmer), we notice, that a liberal education has, of late, been given to those intended for that profession; which must necessarily expand their minds, and remove every prejudice. In those districts where such advantages are not enjoyed, little or no alteration has taken place in the practice of husbandry; which continues in a stationary position, without any attempts being used to keep pace with the great improvements in other sciences.

Perhaps, Lord Kames's *Gentleman Farmer* was the first publication of the kind which proved really beneficial to the Scotish farmer; as opinions are therein constantly subjected to the test of rational principles. His Lordship followed the plan laid down by that prince of philosophers, Lord Bacon; and formed his theory from facts; which is directly the reverse of the ancient, or Aristotelian system. If every landed gentleman in Scotland possessed his Lordship's knowledge, and every farmer was as attentive to practice, then might we expect, that improvements in rural science would advance with rapid strides; and that, in process of time, every part of the country would be cultivated like a garden, without a single spot being left in a waste or unproductive state. I am,

Yours, &c.

A Friend to Improvements.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

Papers concerning the Introduction of Barley Mills into Scotland.

GENTLEMEN,

THE following curious and interesting papers were lately communicated to me by Mr Andrew Meikle, the ingenious mechanic who invented the thrashing machine now in common use; and, as they afford authentic information respecting the introduction of the barley mill into Scotland, I trust you will consider them as worthy of being handed down to posterity through the channel of your Magazine. Mr Meikle is the only surviving son of James Meikle, who went to Holland in 1710, agreeable to the articles of agreement entered into with Mr Fletcher; and he authorises me to say, that his father, along with the materials for the barley mill, brought over a winnowing machine, or what is commonly called a pair of fanners; which identical machine, or at least a part of it, remained at Salton barley mill a few years ago, and probably is used at this date. It is only necessary to add, that Andrew Fletcher,

Fletcher, Esq. styled in the articles of agreement, *Laird of Salton*, was in Holland in the year 1710; from whence, it is probable, he had written to his brother to send over James Meikle. One of his letters, dated *Hague*, 18*th June* 1710, is sent you, as a proof of the above circumstance. Mr Meikle, after having perfected himself in the barley making art, returned safe to Scotland, with the necessary materials, and the mill was immediately erected, and, for a considerable number of years, was the only machine of the kind in the British dominions.—I am, &c.

N.

Articles of Agreement between HENRY FLETCHER *and* JAMES MEIKLE.

IT is agreed, betwixt Henry Fletcher, brother to the Laird of Salton, on the one part, in the name of his said brother, and taking burden upon him for the said Laird of Salton, and James Meikle, wright in Wester Keith, on the other part, that they shall keep and perform to one another, according to the tenor of the following articles, viz.

1. That the said James Meikle shall go to Holland with the first fleet that sails thither, after the date of thir presents, and learn there the perfect art of sheeling barley; both that which is called French barley, and that which is called Pearl barley; and how to accommodate, order, and erect mills for that purpose, in so far as he can, with his uttermost industry, and recommendations given him.

2. That, as soon as the said James Meikle shall find himself sufficiently instructed in said art, he shall return with the first fleet, or man of war, he can have safe passage in, for Scotland or Newcastle. That, in the mean time, if he shall be forced to wait, he shall endeavour to instruct himself in any other useful trade or manufactory.

3. That when he returns to Scotland, he shall be obliged to communicate the arts he has learned to *Salton*, or any whom he shall appoint, and shall communicate them to no other person, but by *Salton's* permission.

4. That *Salton* shall pay all the said James Meikle's expences in going and coming, and in learning said arts.

5. That the said James Meikle shall be master of the sheeling-mill, if he think fit, and shall have a proportional allowance for it, according to the profit it yields; or a yearly salary, according as two honest men, chosen for that end, shall determine. But if the said James Meikle shall not think fit to employ himself in this manner, but can do better otherwise; then he shall be obliged to teach the art of sheeling French barley and Pearl barley to any whom *Salton* appoints, he being paid for the time he employs therein. And besides, in this case, *Salton* shall give him a handsome reward for the pains he has been at, and the art he has taught, he then going out of *Salton's* service, and not profiting any more by the mill. And then the said Meikle shall renew his obligation, not to make use of this art himself, nor teach it to any other.

6. That if it shall happen, that the said James Meikle shall be taken prisoner, either going or coming, *Salton* shall be obliged to relieve him, and pay all his expences.

7. That if it shall happen, that the said James Meikle shall die abroad in his voyage, then *Salton* shall be obliged to give his wife and children 100 merks.

8. That the said James Meikle, from the time he parts from his own house, to go to the ships, till he return, shall be allowed every day two shillings Sterling; to wit, one shilling for his entertainment, and one shilling for his work; and shall give a receipt for any money he gets with him, or any letter of credit he gets, and account for them accordingly when he comes back.

Both parties oblige themselves to keep the foresaid articles, under the penalty of 500 merks, by and attour performance. In witness whereof, they have subscribed thir presents, written by the said Henry Fletcher, at Salton, this 17th of April 1710.

H. Fletcher.
Ja. Meikle.

Copy

Copy of a Letter from Andrew Fletcher, Esq. to James Meikle.

JAMES, *Hague, 18th June* 1710.

I RECEIVED yours of the 14th, and doubt not but you have got the barley before this comes to your hand. As for these big pieces of iron work you speak of, which will be necessary for setting up a mill for sheeling barley, pray cause make them; and let them, and every thing else, which you think necessary to buy in this country, be ready as soon as may be. As for the time of your sailing, it is uncertain; but you must be at Rotterdam by the time the ships fall down, which I shall have timeous advertisement of, and come to bring you away. I believe you may expect me about Friday or Saturday, the 27th and 28th of this month; so, let all be ready against then; and advise with Mr Morison, if you find difficulty in any thing.

I am,

Your assured Friend,

A. FLETCHER.

P. S. If you want money for paying for the things that are to be bought or made, Mr Morison will furnish you. Tom is well again, and I have write to tell your wife that you are so.

FOR THE FARMER'S MAGAZINE.

Account of the Introduction of Summer Fallow into Scotland; with some particulars of John Walker who first practised it.

IT is a curious circumstance in the annals of Scotish husbandry, that notwithstanding *Summer fallow* had been prevalent in England since it was under subjection to the Roman

Roman government; yet this radical improvement was neglected in Scotland, till the conclusion of the 17th, or beginning of the 18th century. From the intimate connexion which subsisted betwixt the two nations after the accession of James VI., it excites surprise, that this and other improvements did not immediately cross the Tweed; and that the different practices of our enlightened neighbours were not earlier imitated by the Scotish agriculturists. As we are, however, certain this was not the case, we must suppose, that some very cogent reasons operated to prevent the introduction of Summer fallow, which was the only method then known for cleaning the ground in an effectual manner. It is more than probable, that the general division bill, passed by the Scotish Parliament 1695, contributed to promote this and many other improvements; for, before the enactment of this salutary law, a considerable part of our best lands remained in *run-ridge*, or in a state something similar to what is still customary in many of the richest English counties. As it is found impracticable, under common-field tenure, to introduce the turnip and grass husbandry, without the special consent of all the persons concerned, we are inclined to believe, that the same circumstance would operate in retarding the reformation of the Scotish customary practices. If Summer fallow had not been practised in England previous to the establishment of common fields, it is certain, that the like difficulties would have attended its posterior introduction, as are at this day experienced in the other branches of husbandry above mentioned.

Be these things as they may, it is undoubtedly true, that Summer fallow was not practised in Scotland earlier than the conclusion of the 17th century; for, in a book entitled, "*Husbandry Anatomized*," published at Edinburgh in 1697, and supposed to be the most ancient treatise upon rural economy in Scotland, we find the fallowing of land recommended in a manner, which shows that it was not then known in the country. The author had served in Flanders, during King William's wars, as an officer of the Earl of Angus, or Cameronian Regiment, and attained perfect knowledge of this fundamental improvement among the *Flemings*, whose practice he fully describes.

The first person who actually fallowed land in Scotland,

land, or, in other words, prepared it for a crop by repeated ploughings and harrowings during the Summer months, was JOHN WALKER, tenant at Beanston in the county of East Lothian. Mr Walker was a respectable character in his profession, and was chief of a family long distinguished among the cultivators of that district. He was the intimate friend of the celebrated Sir William Bennet, Bart. (to whom the honour of writing the Gentle Shepherd has been generally attributed,) who usually spent a good part of his time at Beanston; and this intimacy affords a strong presumption, that Mr Walker had received a liberal education, and possessed a larger stock of knowledge than was then common among the generality of his brethren.

The circumstance which induced him to attempt this beneficial improvement, as we are informed by one of his descendants, proceeded from a conversation with some English travellers on a tour through Scotland, with whom he spent an evening, and who communicated the necessary information respecting the method used by our southern neighbours in the fallowing of land. Resolving, in consequence of their suggestion, to try the efficacy of Summer ploughing, he next year left a field unsown, consisting of six acres of heavy loam, immediately to the westward of the present stack-yard of Beanston Mains; and the attention of his neighours was immediately fixed upon what they considered to be a new fangled and foolish experiment. Some of his sapient friends concluded that his mind was deranged; while others, of greater prudence, sagely conjectured, that poverty was the real cause, and that money was wanting for purchasing seed. Mr Walker, however, went on coolly with his operations; and the field, after being dunged, was sown with wheat, and produced a crop which effectually silenced the observations of his neighbours.

The next year, he successfully increased the size of his fallow break; and the practice, in a short time, rapidly spread over all the county of East Lothian. From Maxwell's Collections, we learn, that so early as 1724, it was commonly practised upon all the strong soils in that county every fifth or sixth year; and to its introduction may, in a great measure, be attributed the acknowledged superiority

riority which that district early attained in the different branches of rural science.

The late Lord Milton, who had the best opportunity of knowing every circumstance relative to the introduction of fallow, was eager to procure the erection of a pillar to the memory of Mr Walker, upon which a full detail of the different particulars was to have been inscribed; but the hurry of public business, in which that eminent personage was constantly engaged, prevented this laudable proposal from being carried into execution. Sir Francis Kinloch, Bart. who was contemporary with Mr Walker, and who resided within half a mile of his farm, also earnestly advised the family, after his decease, to record this important matter upon his tombstone. It is, however, unnecessary to dwell upon these things, as the different circumstances attending this first attempt to renovate the husbandry of Scotland, and the success which accompanied it, are so well known, as to render further observations unnecessary.

Mr Walker was likewise the first person in Scotland who sowed wheat upon what was then called *out-field* land, which, previous to the introduction of fallow, could not have been effected with profit. By the gradual extension of this practice, the low lands of East Lothian have, for a considerable number of years, been kept under a regular course of corn crops, which formerly was only practicable upon the in-field or crop grounds.

In a word, the merit of this eminent and distinguished farmer deserves to be transmitted to posterity with marks of applause; and, if Swift speaks truth in his celebrated adage, he conferred greater benefit upon mankind, and performed more essential service to his country, than the whole race of politicians put together.

N.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Danger attending Trees about Corn Fields.

GENTLEMEN,

I have read your First Number with great pleasure, and I hope it will answer your intention of being both useful and entertaining to the public.

If you think the following observations deserve a place, you may insert them when convenient. I am one of many who have suffered severely, this last harvest, in consequence of my corn fields being surrounded with high trees and hedges; A more distressing situation to the husbandman can hardly be conceived. What must he suffer, to see a great portion of his produce going to destruction, which cannot be saved by any exertion, or additional expence on his part? How much more fortunate is he, whose corn fields are open to the free circulation of air, which is equally beneficial to the health of plants and animals? It is only in open fields you find grain alike in colour and size, well ripened and completely plump; whilst grain, raised on inclosed fields, will be found ill-coloured, small, and unequal. In short, a corn farmer, who has his fields surrounded with high trees and hedges, has to encounter great difficulties every season of the year.

I have mentioned his woful situation in Harvest: In Spring, the high shelter prevents his grounds from drying; of course, he is kept back from ploughing and sowing: In Winter, when the snow drift is blowing, the trees and hedges prepare a resting place for large quantities of snow, which frequently remain all Winter, and stop his Spring work: In Summer, his corns are liable to mildew, and to many other diseases, for want of air; and how much does he suffer from large flocks of small birds eating the crop? But he who has his fields inclosed with hedges without trees, and properly divided in a due proportion to the extent of his farm, may enjoy all the advantages of restoring his exhausted land by rest and pasture, and, when in a corn rotation, he can cut down his hedges, and secure a free circulation of air. A moderate portion of shelter, when grounds are in pasture, may be useful; but

but if inclosures are very small, and trees and hedges very high, the loss of ground is considerable; besides that, the quality of the grass under the branches of the wide spreading trees, although not less in quantity, will be very inferior in quality: And how much are cattle hurt by the swarms of vermin that are bred from, and come forth in the months of July and August, and render those two months of little value to the graziers?

We are told by good authority, that Britain, in the best of seasons, cannot grow enough of corn to supply her consumption; therefore every impediment to the growth of that useful and necessary article should be removed: But, to accomplish these advantages, in many instances, I must appeal to the feelings of all warm-hearted patriotic landlords, who may have their tenants bound to plant and rear trees, where trees should never grow—on corn fields. If they are real lovers of their country, they will cheerfully allow those trees, that are doing so much harm, to be rooted out and destroyed, and they will be fully rewarded, by increasing the value of their ground, and in giving the pleasure of seeing the fields richly covered with full crops of healthy yellow corn.

Hedge-row trees are often to be seen in a very unthriving state, in which case, they are disagreeable objects; and when they happen to thrive, in process of time, they prove the destruction of the hedge.

I am, &c.

VERUS.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the New Mode of Drainage.

GENTLEMEN,

I remember having observed, some years ago, a dispute in the public papers concerning the new mode of drainage, the merit of which was claimed by two respectable and scientific gentlemen, viz. Dr James Anderson and Mr Elkington; but I am inclined to believe, that the chief,

chief, and perhaps the real utility of this improved method of draining, had been previously ascertained by a worthy farmer in the county of East Lothian, to whose grandfather Scotland is indebted for the introduction of summer fallow. The reason which influenced him to try the effect of *pitting*, was, that in attempting to drain a field by the ordinary method then practised, he had missed the *spout* or burst which occasioned the wetness, and, in order to catch it, was induced to dig down in a circular form, till a bottom of sand appeared, when the water sprung up with inexpressible force. It then occurred, that by filling up this pit or well with land stones, and making a communication with the leading or main drain, that the object intended would be effectually accomplished. This was done accordingly, and the spot of ground which required draining, was immediately laid as dry as the other parts of the field. The same person afterwards repeated the trial upon several other fields, and was equally successful as in the instance above mentioned.

A certain gentlemen, now deceased, who was characterised by Mr Wight, in his State of Scotish Husbandry, published in 1778, as a "farmer of the first rank," witnessed the trial, and was perfectly satisfied respecting its utility. I may only add, that the experiment was made in 1750, at which period it is probable Mr Elkington was not in life, and long before the time when Dr Anderson communicated his sentiments to the public, relative to the new mode of drainage.

If this information appears of any importance, I hope it will procure a place in your next number.

I am, &c.

A Friend to Merit.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

On the Advantages of Agricultural Publications.

GENTLEMEN,

As a friend to British Agriculture, which I consider as one of the chief pillars of the State, I beg leave to express my hearty approbation of the design in which you are engaged, being convinced that important advantages may be derived from such a Publication. I have long wished to see a regular Agricultural Pamphlet, and remember well the attempt made by Mr Auld, to publish something of that kind about twenty-five years ago, which failed for want of correspondents and public countenance. I approve so much of your First Number, that I shall be very glad to contribute any aid in my power to the success of the undertaking; trusting that, under the direction of practical men, agriculture may be rescued from the hands of specious theorists, who have, in many instances, seized upon a science, which evidently belongs to professional people.

The only opinion or advice which I can think of hazarding at present relative to your work, is, that care should be taken not to admit papers liable to mislead the practical farmer, or to serve the purposes of those vulgarly called *jobbers*. In Mr Auld's Scots Farmer, many papers were inserted totally inapplicable to the husbandry of Scotland, and consequently useless to his readers: A want of arrangement was also constantly discernible: And I have reason to believe, that these and other defects proceeded from the editor being ignorant of the art proposed to be elucidated in the course of the publication.

With respect to one grand point of improved husbandry, the use of the *Drill Plough*, I should be glad to see facts and consequences well sifted and examined, in your Magazine; being of opinion, that, properly attended to, it may be of the most important benefit to agriculture, and to manufactures, by increasing and cheapening every produce of nature, applicable to the food of the people. Likewise, I should wish to see much attention paid to every kind of labour, and every species of economy capable of being adopted with advantage in our British Georgics; by which means, and those only, Great Britain may be enabled

abled, in spite of most adverse circumstances, with her capital, skill, and dexterity in the arts, to come, on advantageous terms, in competition with foreign markets, in the new condition of things that is fast approaching in Europe, owing to a general spirit of improvement and adventure.

I particularly approve of the full account of markets, and state of rural economy given in the last branch; and hope that the greatest exertions will continue to be used to make this part of the work as full and complete as possible. I am, &c.

Agrestis.

FOR THE FARMER'S MAGAZINE.

Abstract of the Proposals for Establishing, by Subscription, a new Institution, to be called the Plough, or Joint Stock Farming Society; for the purpose of ascertaining the Principles of Agricultural Improvement; submitted to the Consideration of the Friends to Agriculture and other Public Improvements.

By Sir John Sinclair, *Bart. M. P.*

It can hardly be doubted that the art of *Agriculture* can never be bought to any high degree of perfection, unless by means of experiments, accurately tried, and persevered in for some time. We have hitherto, in general, relied too much on vague opinions and assertions, which have not been warranted by sufficient authority; whereas, nothing but accurate and repeated experiments can thoroughly improve the agricultural art, and ascertain the principles on which it ought to be conducted. On these, and other grounds, unnecessary here to dwell on, Mr Arthur Young, Mr Marshall, in a recent, and in former publications, Dr Francis Home, and other distinguished agriculturists, have repeatedly urged the advantage of having farms established for that special purpose. The importance of such farms to the different districts in which they were respectively placed, has been put beyond all question, by the authors above alluded to; and I trust it will ap-

pear, in the course of the following observations, that no measure can be suggested, more likely to be attended with advantageous consequences to the inhabitants of the metropolis, or of any considerable and flourishing town, than that of having an *Experimental Farm*, on a great scale, in its immediate neighbourhood.

I. From the increasing population of London, and of the other large towns in the kingdom, it is impossible they can be supplied with provisions at a reasonable rate, unless the agriculture of the country is brought to a high degree of perfection; which can only be done through the medium of Experimental Farms, the only sure means of ascertaining the principles of improvement. At present, the nation is under the necessity of depending on foreign industry and cultivation for a part of its subsistence; and we are periodically visited with a scarcity of food, which increases the expences of living to every family in the kingdom, and loads the rich with heavy additional burdens to maintain the poor, and to preserve them from the miseries of famine. A small portion of that sum, the exaction of which thus becomes so frequently necessary, were it properly applied to the improvement of agriculture, would soon enable this country to feed itself, and indeed would put it in the power of the farmer to supply the public with provisions at a reasonable rate. Hence, it is evident, that every man who pays 15d. instead of 9d. for a loaf of bread, or 10s. per pound, instead of 2s. for poor rates, ought to consider himself essentially interested in promoting agricultural improvements, and ought for his own interest, to support any measure calculated for that purpose, as far as his circumstances will admit of.

II. It is well known, that there is scarcely any part of the kingdom, where greater quantities of waste and unproductive land are to be found, than in the neigbourhood of London; or ground, in many instances, more capable of improvement. It is to be hoped that the General Bill of Inclosure will soon pass, in consequence of which, those wastes will be divided. But that will be of little avail, unless the means of improving them are ascertained. When Enfield Chase was divided, many persons expected to make considerable profit, by purchasing and improving portions

portions of that waste; but, from ignorance how to go about it, the greater part of these undertakers suffered by the attempt; whereas, had the principles of improvement been accurately ascertained, by means of Experimental Farms, no error of any great magnitude could have been committed; and the purchasers of Enfield Chase would have improved the land they purchased, greatly to their own, and to the public benefit.

III. There are numbers of persons in the city of London, and in other large and flourishing towns, who accumulate considerable fortunes by Commerce, by the Law, by the practice of Medicine, and other lucrative professions, whose ultimate object is, to retire into the country, and to reside on an estate purchased by the profits of their own industry and exertions. But, after having purchased an estate, how can they manage it to advantage, or carry on the improvement of their property, without having previously acquired the knowledge necessary for that purpose? Many have attempted it, but have severely suffered by it; whereas, were there an Experimental Farm in their immediate neighbourhood, which, as subscribers, they had it in their power occasionally to visit, the books of which would always be open for their inspection, they would be enabled to acquire, in fact, without expence, (for their subscriptions to the Experimental Farms will ultimately be repaid, with compound interest), much knowledge and experience in the best modes of managing landed property, and of carrying on every species of improvement, of which they may avail themselves with peculiar advantage, when they are enabled, from the profits of successful industry, to purchase estates in the country.

Lastly, Many of the inhabitants of London are led, for the sake of recreation or health, occasionally to spend some time in the country. At present, many of them leave town without having any particular object when they make such excursions; but if accommodation were provided for those who wished to visit the Experimental Farm, and plots of ground allotted in its neighbourhood, where cottages or villas might be erected by the subscribers, what an advantage would it not be to the promoters of the proposed institution? In that case, when they

went to the country, they would have an opportunity of directing their attention to the most important inquiries, and of collecting information on a subject, in which, in various respects, they must feel themselves deeply interested. Such an advantage ought certainly to be restricted to those who are subscribers to the proposed institution; and must appear, to every intelligent person, a circumstance of the highest importance to any individual residing in the metropolis, in the adjoining villages, or in any considerable town in the kingdom.

Explanation of the Manner in which the proposed Plan is to be carried into Execution.

THOUGH a capital of 80,000l. would be necessary to carry the proposed measure into complete effect; yet from 10,000l. to 20,000l. will be sufficient to give the plan a fair beginning, either with an Experimental Farm, or an extensive Plantation, or with both, in the neighbourhood of the metropolis. It was never intended to let the measure drop if the whole capital could not be raised at once; for, however desirable it might be to carry a great scheme into execution, because it commands the attention of those who take a concern in its management, and must necessarily produce more public good; yet the important object certainly is, to lay a solid foundation, which may afterwards be extended, as circumstances will admit of.

As soon as a proper farm can be established near the metropolis, accompanied with an extensive plantation, the profit of which must at least insure indemnification to the subscribers, there will then be a model held forth, which every county in the kingdom may adopt, that approves of such an idea; and it is, without doubt, much to be wished for, that several Experimental Farms and Plantations were established in various parts of the country, as branches of the same institution; not only for the purpose of comparing the result of the same experiments, carried on by different people, and in a diversity of soils and climates, (by which a spirit of emulation would be excited among the managers appointed to conduct them), but also as it would have the happy effect of directing with greater

greater force, the attention of the public to an institution, which, instead of being confined to any particular district, extended its beneficial influence from one end of the island to the other. Unless, however, the money necessary for that purpose, is in a great measure advanced by the proprietors and farmers, where such farms and plantations ought to be situated, and the management of them overseen by committees of gentlemen residing in their immediate neighbourhood, who would undertake that trouble, and who were interested, as subscribers, in the success of the undertaking, it would be in vain for any institution formed in London, to endeavour to carry such a plan into execution, upon the extensive scale suggested in the original proposal.

As in various parts of the kingdom, however, particularly in the western and midland districts, in the counties of Durham and Northumberland, in Wales, and in Scotland, the establishment of Experimental Farms has long been a favourite object, there can be no doubt, that, by exertion and perseverance, the measure of having a number of Experimental Farms, conducted under the auspices of the same institution, will ultimately be accomplished.

Answers to some Objections which have been urged to the proposed Institution. *

FIRST OBJECTION. *That no Experimental Farm at all is necessary.*

It is supposed by some, that no experimental Farm at all is necessary; and that the principles of agricultural improvement will be brought to a sufficient degree of perfection without such an establishment. That grain may be raised, and cattle bred, without the aid of Experimental

* We were promised by a Correspondent, some observations upon the proposals originally circulated; but we are since informed, that the judicious manner in which the objections to the proposed institution are answered in this abstract, renders the performance of his promise altogether unnecessary.

Farms, may be safely acknowledged; in the same manner, as, in early ages of society, manufactures were carried on for domestic purposes, without the aid of much machinery. But, no sooner had the population and commerce of a country increased, than it became necessary to improve the art of manufacturing even the most common articles, by means of new inventions; and it is equally necessary to improve the art of agriculture, so as to produce more grain, and to feed more cattle on the same extent of ground, otherwise it will be impossible to furnish food to the increasing population of a country. Without Experimental Farms, this cannot be effected: Without such establishment, it is impossible to ascertain what practices ought to be avoided, and what ought to be pursued. The former is as important to be known as the latter; yet they are seldom communicated to the public, because the farmer is in general ashamed of acknowledging his want of success; and, indeed, where his experiments answer, they are frequently concealed, lest others should avail themselves of such discoveries. The object of an Experimental Farm, however, is to ascertain facts, and to publish them; and as much credit would be acquired by an intelligent and public-spirited Society for their exertions in detecting errors, as in proving facts likely to be useful.

SECOND OBJECTION. *That there are many Experimental Farms now carried on by individuals, which will answer the same purpose.*

It is said, in the second place, that there are many distinguished characters, who carry on experiments for their own amusement and information, by whose means every important fact will, in process of time, be ascertained. No man is more disposed to do justice to the merits of the respectable personages above alluded to, than I am; nor can be more convinced, that their example is of infinite advantage to those who have the means of examining the progress they make. Their farms, however, are more properly to be accounted *pattern farms*, for the advantage of their own immediate neighbourhood, than experimental ones, in the strict sense of that word. In order to render, indeed, Experimental Farms generally useful, the farms must be open to the inspection of the public; the account of each experiment must be regularly published; and

and every experiment, likely to affect the cultivation of any part of the kingdom, must be tried with the utmost precision. It cannot be expected, that persons of high rank, and whose attention is necessarily directed to other objects, can renounce every other pursuit, and devote themselves exclusively to the conducting of experiments; whereas, when an Experimental Farm is once established, it will soon be proved, by the evidence of facts, 1. What is the best mode of rendering arable land productive, and the proper rotation of crops to be adopted in all soils and situations: 2. What is the best system for the management of grass land: 3. What are the most useful implements of husbandry: 4. What are the most profitable breeds of animals, and the best and cheapest mode of rearing, of feeding, and of fattening them: 5. What is the best plan for rendering waste or barren land productive. These are points of infinite consequence, which never have yet, and indeed never can be ascertained, unless by means of farms appropriated for that special purpose. It will require, it is true, the unceasing attention of an intelligent manager; and the experiments, in order to be relied on, must be made with almost mathematical accuracy and strictness. The expence also must be considerable; but the ultimate advantage to the public must be so great, as amply to compensate for any trouble or cost which may attend the execution *.

THIRD OBJECTION. *That it will be difficult to find Managers.*

It is an obstacle to this measure, in the apprehension of some, that it will be scarcely possible to find managers qualified for that purpose. It certainly will be attended with some difficulty; but it would be libelling the agricultural skill and integrity of the country, to suppose that such men could not be found. I know some, myself,

* For instance, if the question is—what is the best breed of cattle? their food must be accurately weighed, and a regular account preserved of the whole quantity they eat during the course of the experiment. If the question is, to ascertain whether large or small animals pay best for the food they eat, the experiment must be begun from their birth, and continued till they are slaughtered. In short, almost every experiment of great consequence requires a degree of attention and perseverance, and a duration, in point of time, which can only be expected from a public institution devoted exclusively to that purpose.

self, who would carry on the undertaking with zeal and energy; who would take some shares in the proposed undertaking, as a security for their good behaviour, and a pledge of their being interested in its success; and who, in every other respect, would, I am persuaded, be found perfectly adequate to the task. And here, I beg to remark, that it is hardly possible to suppose any person placed in a more desirable situation than the Manager of such an Experimental Farm, if he felt a zeal in the cause; nor more likely to be detected, if he was either negligent of the duties he had to perform, or was guilty of dishonesty. He would lie under the necessity of making regular weekly reports of all his transactions; the books of the farm would be constantly liable to inspection, and the farm itself open to the examination of the subscribers, and perhaps, at stated times, of the public. A man, placed in a situation so peculiarly ostensible, must be both honest and diligent. If he succeeds in his management, he has the credit of accomplishing one of the most important objects that any individual could undertake; and, if he is detected in acts of negligence or dishonesty, his guilt could not be concealed: it must necessarily become public, and he is ruined for ever. With such inducements to act well, and such serious grounds of apprehension, if he should act otherwise, it is scarcely possible to suppose that any human being, of common understanding, could be deficient in his duty.

In regard to the particular plan of experiments to be pursued, the following measures may be adopted. As soon as a farm is taken, an accurate plan of it should be obtained, distinguishing the different soils, and every other circumstance connected with it. Every assistance will then be procured from the most skilful practical farmers in the kingdom, to draw up a regular course of experiments, and a rotation of crops best calculated for the different fields; and such a plan must be rigidly adhered to by the manager, unless the committee of management give directions to the contrary. Thus, the manager will only be accountable for the strict execution of the orders he receives; and, as those orders will be given in consequence of the most mature consideration, hence the whole system, it is to be hoped, will be carried on with the utmost regularity and correctness. There would not then be a single principal in agriculture, that might

might not thus be ascertained in the space of a few years; and farmers, in future, would have an invariable standard to go by, which they might rely on with certainty.

FOURTH OBJECTION. *That the Profits of the proposed Plantations are overrated.*

It is evidently impossible to foresee what will be the value of timber 30 years hence, as that must entirely depend on the quantity brought to market, on the demand, and on the state of credit, and the quantity of money in circulation at the moment. As the price of every article, however, is progressively rising, is there not reason to imagine, that it will also be the case with timber? But even if that should not be the case, should timber only sell at its present value, the following circumstances will sufficiently prove, that the calculation of profit given in the original proposals, *is greatly underrated.* The circumstance alluded to is this:—In the neighbourhood of Edinburgh, there is a considerable wood, amounting to above 300 acres, called the Forest of Culross. It consists of Scots firs, 43 years old. An exact survey has been taken of it, and an estimate of its value drawn up. It is stated in the advertisement, that there are 3500 cubical feet of measureable timber, the upset price of which is 6d. per foot; and 6000 running feet of pit-timber, at one farthing per foot. The value of both, per acre, would then be as follows:

1. 3500 cubic feet, at 6d. per foot	L. 87	10	0
2. 6000 running feet, at one farthing per foot - - -	6	5	0
Total, per acre,	L. 93	15	0

It is well known, that the value of larch, at 30 years of age, is equal to that of fir at 45 years. There is reason therefore to hope, that the 5000 acres of land, proposed to be planted with larch, would be worth 90l. per acre, which, for 5000 acres, would amount to 450,000l. instead of 218,000l., at which the sale of the timber, the ground, &c. was originally estimated. What the timber in Culross Forest will really sell for, is not yet known; but there is every reason to believe, that the price must be higher than 6d. per foot, and that the calculation of profit from the proposed plantations, originally stated at 218,000l., will be found greatly underrated.

On the whole, I hope it will appear, that though there is no plan, of so extensive and complicated a nature, to which

which ingenious men may not discover objections, yet, that none can be urged against the present proposals, which may not be satisfactorily answered; and that, even if some difficulties should remain, they ought not to stand in the way of carrying a measure into effect, of such infinite public importance, which would lay the foundation of rendering this country superior to every other for agricultural skill, and consequently the most likely to reach the summit of power and opulence.

The following Particulars will explain the Nature of the proposed Institution.

I. *The proposed Capital.*

1600 shares, at 50l. each - -	L. 80,000

It is also intended to admit half shares at 25l. each; but the persons holding them, though they will have a right to partake in the pecuniary advantages of the proposed institution, are not to be entitled to vote in the choice of the directors. The number of shares, which each person may hold, not to be restricted. The directors to be annually chosen in London, and to meet there. The books of the Society to be always open to the inspection of the subscribers.

II. *Proposed Expenditure.*

1. To the expence of establishing eight experimental arable and grazing farms, in the neighbourhood of London, and in different parts of the kingdom, at 4000l. each, on an average	L. 32,000
2. To ditto for two upland farms, for improving mountain sheep, at 1500l. each -	3,000
3. To the expence of purchasing 5000 acres of land, inclosing, and planting them with larch fir, and other trees, and other expences attending the same - - - - -	35,000
4. To a contingent fund, reserved for incidental and unforeseen expences - -	10,000
	L. 80,000

III.

III. *Ultimate Return.*

1. Sale of stock, crop, and implements on the Experimental Farms, at the conclusion of 21, or of 30 years, or any other period that may be fixed on by the Society * - -	L. 35,000
2. Value of 5000 acres of land, the buildings erected thereon, and of 1,250,000 larches, fir, and other trees, at the conclusion of 30 years	218,000
3. Principal of the contingent fund, on the supposition that the interest will defray all expences of management, &c. - -	10,000
Total -	L. 263,000

which is about thrice the original capital. According to the calculations of some experienced nurserymen, the return will be still greater, and will exceed the produce of the capital laid out, at compound interest, at 5 per cent. Without pretending to ascertain what must depend upon the value of timber, and a variety of other circumstances at the moment, it may be sufficient to remark, that the proposed institution must not only be productive of infinite public benefit, but must ultimately be a concern sufficiently profitable, to entitle it to the cordial support of those who are friends to public improvement.

In addition to the ultimate return, the subscribers will, in the *interim*, enjoy the following advantages, namely:

1. The advantage of having an account of the proceedings of the Society annually transmitted to them;

2. The privilege of visiting the Experimental Farms, either in their own neighbourhood, or wherever they are established by the Society;

3. The right of nominating persons, to be instructed at the different agricultural academies proposed to be erected at each Experimental Farm; and,

4. A division of the annual profit that may arise from the Experimental Farms.

It is also intended to keep up such a connexion with the Board of Agriculture, and the various societies formed

* The Experimental Farms might be given up at the end of twenty-one years, and that part of the property divided. The plantations, probably, had better be retained for nine or ten years longer.

ed for agricultural purposes in the kingdom, as cannot fail to be attended with the most important advantages, both to the Society itself, and to the farming interest in general.

Conditions of the Subscription.

1. That no subscriber shall be compellable to pay his subscription, or shall incur any expence whatever, unless the purposes of the institution are actually carried into effect.

2. That the capital of 80,000l. shall not be increased, without the consent of a majority of the subscribers, and for the manifest interest of the subscribers, and of the public.

3. That the Society shall be established by charter, or by act of Parliament, or by deed enrolled, so as to prevent the possibility of any demand beyond the sum subscribed.

4. That the shares shall be transferable from the time that the Society is established, and that the sums subscribed shall be payable by such instalments as may be determined on at a general special meeting of the subscribers, and issued solely under the authority of directors, or trustees, appointed by the Society for that special purpose.

Farther particulars, regarding the proper institution, will soon be published, and may be had of Messrs G. and W. Nicol, booksellers to his Majesty, Pall-Mall. And subscriptions will be received by William Devaynes, Esq. treasurer to the Society, and by all the principal bankers in London.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

GENTLEMEN,

IF you think the following observations on the management of *Hay* deserving of notice, they may be inserted in your next Number.

The treatment of *Hay* is a subject of high importance to the agricultural interest of Britain, not only as a valuable article of produce, but as constituting a bulky and essential part of the food of our domestic animals, upon which

which their health and usefulness in a great measure depend.

Where such a valuable interest is at stake, we might naturally expect to see experiments made, and a suitable degree of attention paid, to form a regular system of management. It is much to be regretted, that in many parts of the island, no such attention has been paid; and the treatment, especially in many parts of North Britain, is slovenly in the extreme, and very ill calculated to secure and preserve, in the highest degree of perfection, that flavour, and those nourishing qualities, without which, neither hay, nor indeed any description of herbage, can be valuable.

The first consideration in the treatment of hay, is, the period at which it should be cut, and the weather most proper for that operation. The time most proper for cutting the different kinds of grain, together with every step of the after-management, are points well understood, and for the most part strictly observed; every farmer being sensible, that any neglect of, or deviation from these rules, will, by impairing the quality both of the grain and straw, be productive of much trouble and loss to himself. It is somewhat surprising, that the same kind of reasoning should not have been applied to the management of hay; as any diminution of its value, arising from improper treatment, must be equally prejudicial both to the grower and consumer of that article, as to the grower and consumer of grain.

The practice of many farmers in North Britain is, to allow their hay, not only to attain its ultimate growth, but even to make some progress towards decay, before it is cut: To obtain a bulky crop, being their chief object, every other consideration is disregarded; and neither the period of growth at which the cutting ought to commence, the weather most proper for that operation, nor indeed any step of the after-management, are regulated by first rules. In place of cutting the crop during dry weather, and when it is free from every other but its own natural moisture, it is very often cut in a wet state, and on that account must remain in the swath a considerable time before it is fit for being put into cocks, during which it requires to be frequently turned and exposed to the sun and atmosphere, for the purpose of drying it: In that way, a considerable proportion

proportion of its natural juices are dissipated; and by the time it is dry enough for putting into the stack, it has lost not only its flavour, but a great part of its most valuable properties; an evil that is farther increased, if much rain happen to fall either immediately after the cutting, or at any period before it is put into cocks: In that case, a still greater loss of its nourishing properties, and a consequent diminution of its value, must happen.

The consequences of this management are felt in a variety of shapes, in every district where it prevails. In the lower districts, the mischief is comparatively small, owing to the mildness of the Winters, the great quantity of rich foggage every where to be met with, and the abundance of corn straw, and other wholesome articles of food, with which these parts abound. In the hilly and upland districts, however, the case is very different; and the loss arising from the neglect and mismanagement of their hay is great, almost beyond calculation. In these elevated regions, the Winters are, for the most part, of uncommon length and severity; little straw is produced; sown grasses, turnips, and potatoes, are equally scarce: In that way, the chief dependence of the farmer, for Winter food to his stock, falls upon the hay, which, when the quality is bad, and other articles scarce, induces debility and disease to such a degree, that a great part of the stock either die, or are reduced to a state of extreme weakness during the Winter; and when the Spring arrives, the green food has such an effect upon the bowels of those who have survived, that many of them die also.

The greatest part of the hay grown in these parts, is the produce of the wet swampy grounds, and the plants of which it consists, are of a nature that requires much judgment and attention to cure, in such a manner as to unite every advantage that might be expected from their use. When cut at a certain period of their growth, there is perhaps no species of herbage sweeter, or more tender, or that contains more nourishing juices, or is more palatable to the animals fed with it, than meadow hay. It has already been observed, that, under the present system of management, the period most proper for cutting hay, is less an object of attention than it ought to be. Experience proves, that the greatest perfection of the herbage is met with,

with, either immediately before it comes into flower, or as soon as the first flowers blow: At that period, it is in no shape exhausted, either by blowing a multitude of flowers, or forming seeds, and contains all the useful qualities of which its nature is capable: After that period, it daily diminishes in value, becomes tough, sapless, and unpalatable, and is not chewed without considerable difficulty. This rule applies to every species of herbage that is meant to be dried for Winter food; but to coarse hay, the produce of wet or marshy grounds, it is strongly applicable; for, as we have already observed, most of the plants which grow in these situations, when they are in full vigour, are as tender, and contain perhaps as great a proportion of nourishing juices, as any other description of hay; and, when cut at that stage, and properly managed afterwards, form a valuable article of food both for sheep and cattle; but when the cutting is delayed, as indeed it very often is, till an advanced period of the season, when the plants have not only reached their ultimate growth, but begun to decay, this description of herbage becomes at once the coarsest and least nourishing of all food.

This opinion does not proceed upon theory, but upon the solid ground of experiments carefully made upon many different kinds of herbage, at different periods of their growth, the result of which establishes a fact that cannot be too generally known, viz. that plants of all sorts, if they are cut when in full vigour, and afterwards carefully dried, without any waste of their natural juices, either by bleaching with rain, or exhalation, contain, weight for weight, a quantity of nourishing matter nearly double what they do, when allowed to attain their full growth, and make some progress towards decay.

Hay of all kinds should certainly be cut at the period we have mentioned, and, if possible, during dry weather; and, in place of being suffered to remain in the swath for days, as is commonly done, women with forks or rakes should follow the cutters, and spread it in such a manner as to allow the sun and air free access to the whole. If this operation is properly performed, and the weather favourable, the hay that was cut in the morning will be ready to be put into small cocks by mid-day, where it may remain for two or three days; at the end of which, if the weather

weather is dry, they may be thrown down early in the morning, and, after being exposed to the sun and atmosphere for a few hours, put up into ricks of at least forty or fifty stones each, where it may remain with perfect safety, till it is convenient to stack it. By such treatment, every valuable quality is preserved, the hay is of a fine green colour, and possesses so agreeable a flavour, that the animals eat it with the greatest relish. Before stacking, some attention will be necessary to render the whole as uniformly dry as possible, especially if much rain has fallen, and the wind continued for any considerable time in one quarter after the hay has been put into ricks; when that is the case, one side will be found damp, while that which is exposed to the wind is perfectly dry; the remedy consists in turning the ricks round, which is done with great ease, by placing six or eight people, at equal distances, round the rick, with directions to thrust their hands as far as they can under the bottom, at the same time grasping a handful of the hay: When the whole are ready, let them lift at once, and move round in the direction intended, till the damp side is opposed to the wind: In that way, ricks of fifty or sixty stones may be turned with ease and expedition, and the whole rendered uniformly dry in a short time.

It has been contended by many, that there is no great necessity for being so solicitous to have hay thoroughly dry before it is put into the stack, as it will keep perfectly well even with a considerable proportion of moisture; and, should any apprehension be entertained to the contrary, all danger will be prevented, by mixing it with salt; a practice strenuously recommended by many intelligent writers.

Trials carefully made, and upon a scale so extensive as to occasion very considerable loss to those concerned, prove, beyond a doubt, that the addition of salt to damp hay is no preservative against its heating; on the contrary, if moist weather follow immediately after it is put into the stack, the addition of salt, in place of being useful, will prove hurtful; it being a well established fact, that salt, and every thing impregnated therewith, greedily attracts the moisture of the atmosphere, and occasions a degree of dampness that would not otherwise have taken place.

The

The experience of persons who build houses with stones taken from the bed of the sea, is an undeniable proof of this; as the walls of such buildings are always damp and uncomfortable, even if they should stand for centuries, have we any reason to suppose that the case will be different when salt is mixed with hay? Either in a damp or dry state, if it is put into the stack damp, the salt will very effectually prevent its farther progress in drying, with this disagreeable addition, that if wet weather follow, the salt, by attracting an additional quantity of moisture, will increase the evil.

The case is not materially different, when salt is mixed with even the driest hay, especially in situations where the climate is moist, and the winters long; for, if the quantity of salt employed is considerable, the continual attraction from the atmosphere during the Winter months, if it does not destroy it entirely, will at least have the effect of rendering it musty and unpalatable.

But though we thus disapprove the practice of salting hay when it is put into the stack, whether in a moist or dry state, there is every reason to believe, that it will be highly salutary and useful, if applied with judgment at a subsequent period. The beneficial effects of meadows or marshes that have been overflowed with salt water, upon the health of sheep and cattle, and the high relish they have for such pastures, are well known; the preference given by the animals is strong and decided: Is there any reason to suppose that an equal preference would not be given to hay tinged with salt?

In bad seasons, when hay has been much injured by the weather, it is not only tasteless, but disagreeable to the animals in the Spring, who eat it only from necessity. When that is the case, it becomes an object to mix with it any article that can remedy these defects; for that purpose, nothing is better calculated than salt, which, along with its giving the hay an agreeable taste, has a medicinal effect upon the bowels of the animals; a matter at present too much neglected, while they are feeding upon dry food. The most proper time for applying the salt, seems to be a day or two before the hay is used. At that time, a quantity sufficient for two days consumption should be taken from the stack, and laid either in a shed or barn; a

thin stratum should first be spread upon the floor, and lightly sprinkled with water from the rose of a watering-pan; a small quantity of salt should then be equally scattered upon it; after which another stratum of hay should be added; and the same operations of watering and salting repeated, till the whole quantity is gone through; it should then be well turned and mixed with a fork, and allowed to remain in a heap for one night; after which, it it will be fit for use.

It is necessary to observe, that the quantity of water applied should never exceed what is necessary to damp the hay; and the proportion of salt should be confined to what will give it an agreeable flavour: a superabundance of either, in place of being useful, defeats the purpose for which they are applied. If there is too much water, it runs off, carrying the salt along with it; if too much salt, it renders the hay bitter. The salt made use of should be of the smallest kind, for the purpose of sprinkling it equally; and every possible means should be taken to prevent one part of the hay from getting more than another.

It is worthy of notice, that though the salting of hay a day or two before it is used, is in general attended with advantages, we beg leave to be understood as meaning only the coarsest kinds, or such as may been have injured by the weather; for, in every instance where it has been cut at the proper season, and well managed afterwards, the taste and flavour will be such as to recommend it to the animals, without any addition whatever; but, in unfavourable years, when the quality is much impaired by the weather, especially if the hay is coarse, and treated in the manner commonly practised in the hilly and upland parts of the country, the operation of watering, with the addition of salt, will, by softening and giving it an agreeable taste, induce the animals to eat it with advantage, in many instances when it would otherwise be rejected. It is perhaps in such cases only, that salt can be useful, unless it be meant as a medicine; and it is very apparent, that the hint of using salt at all, originated in the preference given to salt marshes over other pastures, by both sheep and cattle.

In treating of an article of such value and importance as

as hay, it is worth while to inquire, what are the most advantageous and economical modes of using it.

Every good farmer is now sensible, that when any considerable quantity either of hay or other fodder is given to horses, sheep, or cattle, at once, the effect of their breath blowing upon it, joined to other causes, renders it so disagreeable, that they soon loathe and refuse to eat it; in that way a considerable part of it is lost. On the contrary, when it is given frequently, and in small quantity, it contracts no disagreeable smell, and the animals eat up the whole. Farmers of a certain description will no doubt object to this mode of feeding, on account of the trouble with which it is attended. With them, it is a maxim, that if the animals are fed once, or at most twice, in the twenty-four hours, it is sufficient; and that if they are hungry, they run no risk of starving, while they have food so near them. They do not, however, reflect upon the injury which the fodder thus used sustains by being breathed and trod upon, and impregnated with dung and urine. Let such men consider, for a moment, how they would relish the remains of their dinner served up for supper, after being kept within a yard of their nose during the interval, upon the same plates, with the same knives and forks, without any washing or cleaning. There are few people, indeed, who would not nauseate and reject such a meal.

The case cannot be very different with any of our domestic animals, when they have a quantity of hay or other fodder given them, sufficient for a whole day's consumption; having it constantly in their sight, and being blown and trod upon, impregnated with urine and otherwise injured, it becomes loathsome beyond description; and, in place of being eat up, which it always is when small quantities are given at a time, and frequently repeated, a great part is rejected. It ought therefore to be a rule with all farmers, to give little at a time, and repeat it frequently, always taking care that what was last given shall be consumed, before they receive an additional supply. By such management, no part of the fodder will be lost, and the animals will at the same time derive more benefit from the use of it.

Another economical practice remains to be mentioned,

namely, the mixing of straw with hay. From many trials in different parts of the country, it appears, that where good straw can be had in plenty, it may be mixed with hay to great advantage. Some farmers are in the habit of mixing straw with cutting grass, the benefit of which will be afterwards noticed. When straw is mixed with hay, the process of curing may be accelerated, and the quality of the hay at the same time improved, by leading out the straw to the field, mixing it intimately with the hay immediately after it is cut, and putting the whole into small hand-cocks, as soon as it is mixed. It is well known, that when moist and dry bodies are brought into contact, the former begin to give out a part of their moisture, which is as greedily absorbed by the latter, and continues to be so till a balance is established between them; or, in other words, till both contain an equal proportion of humidity. This is precisely what happens when dry straw is mixed with green herbage. Immediately after they are laid together, the straw begins to absorb a part of the juices, and continues to do so as long as the grass will part with any. In that way, every part of the natural juices is effectually preserved; and the straw, from the absorption of what would otherwise have been either evaporated by the sun, or washed away by the rain, is rendered nearly equal in value to the hay. Where this practice is followed, and due pains taken in the mixing, very little exposure to the sun or atmosphere is necessary, and the hay will be fit for putting into the stack in half the time that is required where no straw is used.

In place of leading out the straw to the field, it is customary, in some parts of the country, to mix it with the hay in the stack, by laying alternate stratums of each, a practice that answers pretty well, but is much inferior to that above recommended. It may, however, be very useful in unfavourable seasons, and be the means of preserving hay that could not be cured otherwise.

When straw is mixed with grass for present use, a quantity sufficient for several days consumption should be cut at once, and after mixing, laid up in pretty large heaps, and allowed to remain in that state for a couple of days at least; at the end of which, the straw will be found much softened and impregnated with the juices of the grass. When a fair trial is given to this practice, several advantages

tages will be found to arise from it: The *first* is, the conversion of a considerable quantity of straw, which would otherwise have been of little value, into a wholesome and nourishing article of food; the *second*, that grass so mixed, has not that purgative quality it is known to possess in its simple state, and seems to keep the bowels in a medium state, preventing alike the extremes of scouring and costiveness, circumstances of much importance to the health and strength of the animals.

It has been recommended, and to a certain extent practised by some farmers, to mix old and new hay. Upon this point, we have simply to observe, that if old hay has been well got, and properly secured in the stack, it will be found for many purposes superior to the new; it certainly contains a firmer and more concentrated nourishment than new hay can possibly do; and for all animals that are employed in constant and severe exertion, it is infinitely preferable. There is a period, however, beyond which, even the best old hay will, by being excessively dried, begin to be impaired in its quality, and be eaten with much less relish. In such cases, a mixture of new hay will be useful; as the old, by the absorption of the new juices, will recover a part of the moisture and flavour it had lost by long keeping. The same thing will happen, if the hay of the former year has been of an inferior quality, owing either to its having been allowed to stand too long before cutting, or to its being bleached with rain after it is cut. In either of these cases, the defect will be in some degree repaired, by mixing it with new juicy well-flavoured herbage.

A. Z.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

GENTLEMEN,

It will be obliging, that you give a place in your next Number, to the following queries, respecting the size of the measures of capacity used in England.—I am, &c.

A Merchant.

QUERY I.

Whether the returns made from the London market, of the price of grain, are ascertained by the quarter, raised from the corn gallon kept in Guildhall, which contains as follows:

Gallon	272¼	} solid inches;
Bushel	2,178	
Quarter	17,424	

or from the legal Winchester bushel, according to the standard in his Majesty's Exchequer; by which the duties on malt, &c. are charged, which is as follows:

Gallon	268.8	} solid inches?
Bushel	2,150.4	
Quarter	17,203.30	

QUERY II.

Is not the former quarter considered as the standard for measuring corn, salt, coals, and other dry goods in England, under the title of Winchester measure?

PART

PART II.

REVIEW OF AGRICULTURAL PUBLICATIONS.

General View of the Agriculture in the County of Perth, with Observations on the means of its Improvement. By JAMES ROBERTSON, *D. D. Minister at Callander, in the County of Perth. Drawn up for the Consideration of the Board of Agriculture and Internal Improvement.* 575 *pages,* 8vo. *Printed at* Perth, *and sold by* Morison *and others*—1799.

AGRICULTURE was long neglected by the inhabitants of the Northern parts of Scotland; and it is only of late that this useful science can be considered to have been practised among them upon any thing like rational principles. It gives us great satisfaction to learn, that rural knowledge is now extensively disseminated over the most distant districts, and that the northern division of the island promises, at no very distant period, to rival our southern neighbours in practical husbandry, which has long been their favourite profession.

Many causes might be assigned for the supineness and inactivity of former times. The Feudal System, which was not abrogated in Scotland till 1748, enervated the faculties of the farmer, and kept him in a state of the most abject dependence; while a general want of capital retarded every species of improvement whatever. Since the period above mentioned, these difficulties have gradually vanished; the condition of the tenantry has been meliorated, and a spirit of enterprise excited amongst that body of men, which has contributed not only to enlighten their minds, but likewise to throw a degree of capital into their hands necessary for promoting a flourishing agriculture.

The intelligent work now before us, affords the most satisfactory proof that the circumstances which long obstructed improvement are now generally removed, and that every branch of rural science is making a rapid progress in the centre of North Britain, where hitherto it was imperfectly understood. From the indefatigable and judicious exertions of the Reverend Gentleman, who, under the authority of the Board of Agriculture, has drawn up this work, the state of husbandry in Perthshire is clearly elucidated, and the most interesting information communicated.

In reviewing such a meritorious publication, wherein we find little to blame, and a great deal to praise, want of room prevents us from analysing its various parts with that minute attention which their value deserves. We will therefore try to seize upon some of its most prominent parts, and endeavour to convey to our readers a slight idea of the masterly manner in which the husbandry of this extensive and complicated district is detailed.

Passing over the introduction and preliminary observations, wherein much good sense and knowledge of mankind are displayed, we notice, in the first chapter, that the county of Perth contains 5000 square miles, or 3,200,000 Scots statute acres; in which there is certainly some mistake, as that number of miles ought only to return 2,500,000 acres. The natural divisions are said to be Highland and Lowland; eighteen parishes being situated in the first, and fifty-nine parishes in the second division. The climate, notwithstanding its numerous varieties, cannot, upon the whole, be considered as unfavourable to the general purposes of husbandry; and as for the soil, so much information is communicated respecting what has been called "the capital stock of the country," that the section, well deserves the attentive perusal of those interested in its prosperity.

Limestone appears to be plentiful in the Highland district, though, from the want of coal, the inhabitants cannot partake of the full advantages accompanying the application of this beneficial article. This suggested to the fertile genius of Lord Kames, a scheme for having the stone reduced to powder, to compensate for the want of materials for accomplishing calcination; but unfortunately the machine erected by the Commissioners of the

Forfeited

Forfeited Estates, upon his Lordship's suggestion, was swept away by a flood, before the benefits of the process were sufficiently ascertained. It certainly would be worth while for the proprietors, locally deprived of the assistance of lime, to erect another, or more machines, as few doubts can be entertained respecting their utility. Unburnt limestone, when reduced to powder, though it has not the same activity as that which has undergone the action of the fire, is a valuable article, and, in particular situations, even more useful than quicklime.

The second chapter contains the *State of Property*, wherein justice is done to the characters of the Noblemen and Gentlemen of Perthshire, who "are regarded as the fathers and friends of every person within their domains." The following passage deserves the greatest praise, being dictated by strong good sense, and founded upon just views of human nature:

"While the supercilious landlord, who, with an air of disdain, keeps his tenants at a distance, or does not know them at all, scarcely receives the cold salute and ceremonious bow which is due to rank; he who bends a little, and exchanges a few kind expressions, receives the respectful salutation of esteem, accompanied with the affectionate language of gratitude. The most beloved, and the most successful generals, were those who knew their soldiers personally. No man is less dignified for being beloved; and it lessens no man's consequence in the world, to have the confidence of those around him. Hence, the generality of proprietors, who are resident on their estates, lead their tenants by the hand, in the road of improvement, and of wealth; and have found the true secret of promoting their own interest, while they promote the interest of their people."

The *Size of Farms*, and character of the possessors, are well described. We observe two notes upon this section by a Mr Samuel Fieldhouse, Cavendish Street, London, and Mr Bailey at Chillingham. The first asserts, that if landlords had confined farms to the size of fifty acres, the increase of their wealth (rent) would have been much greater than it now is; while the other, with greater reason on his side, maintains, that upon a large farm, "more hands are employed, more produce raised," and consequently, that such are more beneficial to the landlord, and to the public. Though it is evident, that many circumstances

stances must be taken into consideration, before the proper size of a farm can be properly ascertained; and that, at the best, it is but an abstract question; yet, in a general point of view, the assertion made by Mr Fieldhouse will be found contradicted by common practice. A farm of fifty acres English measure, which must be what is here meant, cannot, in ordinary years, return a produce exceeding 250l. in value; of which, the rent and public burdens will at least require 75l. One half of the remainder will be consumed upon the premises, while a sum, not exceeding 85l., is only left for paying servants wages, defraying interest of capital stock, supporting tear and wear, purchasing grass seeds, and answering that complicated account called incidental expences. The fact is, that, in the present state of things, 50 acres of land cannot be managed with the least degree of advantage, unless the tenant work the farm himself; and, in such a case, from instances which have come under our observation, his condition will not be superior to that of a hired servant, while his toil and trouble will be far greater. The matter will not be mended, by saying, that the labour may be performed by the farmer's family; for they will be found still more expensive than hired servants.

Where facts can be adduced, it is unnecessary to have recourse to argument; in the present case, the former decidedly contradicts the unqualified assertion of Mr Fieldhouse. If any person, who has examined the husbandry of Britain, is called in evidence, his testimony will prove, that those parts of the kingdom, where extensive farms prevail, are uniformly best cultivated, and consequently capable of making the greatest returns to the proprietors: instance, Northumberland, Norfolk, Suffolk, Essex, and Kent, where the farms in general are of considerable extent; they are cultivated in a superior manner to the midland and western counties, where the size of farms is much contracted. We might, in fact, as well suppose, that a petty weaver carried on his trade with equal success as a large manufacturer, who was provided with hands for every department of business, as think that a fifty acre farm could be managed with greater advantage than one of larger extent, where the husbandry practised, affords constant employment to all concerned, and gives

a division of labour according to the respective talents of each individual.

We notice Mr Bailey's note repeated, p. 387, and an answer subjoined by Dr Robertson, which does not savour of his usual ingenuity. Mr Bailey does not enter upon the question, whether an acre of land, employed in producing beef and mutton, will feed as many mouths as the same quantity employed in raising grain? which we certainly think it will not: He only means, that a certain quantity of land must be devoted to grazing, and that it is immaterial, whether the farm be large or small, as butcher meat must be had, in either case, proportioned to the demand. Dr Robertson's answer, however, proceeds upon the supposition, that a large farm must be in grass, otherwise his argument is untenable.

Dr Robertson is a friend to the granting of *leases*, without which, he, with great justice, thinks it vain to expect that the husbandry of any country will be improved. His arguments under this section, are strong, decisive, and incontrovertible. We are not however certain, if he is altogether so *orthodox*, respecting the nature of the clauses, or covenants, which should bind the farmer; but we must acknowledge, that he offers weighty reasons in support of his opinion. What he says, p. 433, &c. upon this subject, may be read with advantage, both by proprietors and farmers.

Under the article "Expence and Profit," we are presented with a detailed account of the returns from a farm of 74 acres in the Carse of Gowrie, which, if correct, would be a better argument in favour of small farms, than any we have heard instanced. The rent is stated to be 3l. per acre, and yet a profit of 310l. 6s. 2d. per annum appears, which is very near four guineas per acre. We are under the necessity of offering a few remarks on the different articles, being convinced that such details are very injurious to the tenantry of the kingdom, not because they disclose the *real* profits of husbandry, but because they present false and mistaken views of the business, and contribute to impress superficial inquirers with a belief, that farming is a much better trade than it really is. Indeed, if every person made such handsome profits as the owner,

or

or tenant of the farm in question, (who is held up as a model of correctness), it would be the best trade in the kingdom.

1*st*, The seed-wheat is charged 5s. 6d. per boll less than the produce sold. This might actually happen; but the casual rise of markets is not a fair statement of rural profits; the reverse might happen in another year. 2*dly*, The same observation applies to the barley crop. 3*dly*, The whole expence is charged only at the rate of 40s. per acre; whereas the charge for ploughing, or what is included under the expence of horses and ploughmen, would amount to that sum, independent of incidentals, harvest-work, thrashing, &c. 4*thly*, The different crops are all excellent, and much greater than any average will warrant, while no allowance or deduction is made for light grain. 5*thly*, The prices are much higher than what the fiars of Perthshire will allow; their average for wheat, from 1780 to 1796, being about 22s. 3d., which includes one year viz. 1795, when grain was extraordinary high; whereas 27s. 6d. is stated for nearly the whole of the crop. It is needless to examine this account of expence and profit further, as we believe the dullest of our readers will be satisfied that it is very erroneous. Indeed, when the rent of a farm is 3l. per acre, it is a handsome return if 20s. per acre of profit is made, after interest of stock, tear and wear, and all other expences, are paid.

The Carse of Gowrie is perhaps as regularly managed as any district of similar extent in Great Britain; and we cheerfully bestow every manner of praise upon the rational and judicious husbandry there practised. Mr Arthur Young, in his Agricultural works, often feelingly laments the general bad cultivation of clay soils in England: but were he to visit this valuable tract of land, he certainly would rejoice that there are some farmers in the kingdom who understand the management of clay soils. A better rotation than *sixes* cannot be devised for such a soil, provided the fallow break is sufficiently wrought and manured, which, we believe, is seldom neglected.

Chapter 7th contains very judicious remarks upon that necessary step to improved husbandry, viz. *levelling of ridges*. Indeed, the different sections of this chapter incline us to believe, that Dr R. is intimately acquainted with the management of arable land; for tillage, fallowing,

ing, and the rotation of crops, could not have been more judiciously explained by the most distinguished agriculturist. The information communicated respecting the different processes of rural economy, from the ploughing of the ground, to the reaping and ingathering of the crop, are more amply detailed than in any other survey that has come under our consideration. This chapter may be read with pleasure by the best, and with profit by the unexperienced husbandman.

In the section concerning *hay harvest*, it is said, p. 218, that, in 1786, Mr Paterson of Castle-Huntly "had 6000 stones of hay from a field of 13 acres," or nearly 450 stones per acre, which is 130 stones more than the greatest crop ever known in our practice. We remember of a certain person, who once vaunted that his hay crop turned out 500 stones per acre: "Pray," said a shrewd sagacious neighbour, "did you measure the ground?" "No, I only computed it." "Did you weigh the hay?" "No, I counted the cart loads, and estimated the produce." So much for a great crop of hay! We acknowledge, at the same time, that we have seen heavier crops of clover-grass in the Carse of Gowrie, than in any other district of the kingdom; and are far from calling in question the veracity of the account here given.

The chapter upon *Woods and Plantations*, constitutes an important department of the work, and deserves the attentive perusal of the landed proprietors, who are chiefly interested in this branch of rural improvement. Dr R. says, "there are more oak woods, and of greater value, "in Perthshire, than in all the rest of Scotland:" but it "appears, that a great deal of moorish lands might be advantageously employed in growing Scots firs and larches, which is corroborated by several judicious, and apparently accurate calculations.

The *Live Stock* of the county is amply described in the 13th chapter; and we give Dr R. great credit for the judicious remarks which he makes upon this subject. We decidedly coincide with him in opinion, "that sheep are the "most profitable, the most useful, and the most inoffen-"sive of all the browsing animals;" and that, upon any "given extent of pasture, their returns are nearly one-third "more than that of any other stock." We observe a degree of apprehension, however, that the sheep system may be

be carried too far; but this, under the increase of consumption, gives no real cause of alarm. While Dr Robertson is rather partial to the raising of black cattle, he gives, in our opinion, the best of all reasons why sheep ought to be kept. To do the subject justice, we shall extract two paragraphs from pages 310 and 311, which meet with our unqualified approbation.

"This rage for a sheep stock is still going on; and the cattle must necessarily travel down to market, whose place is annually occupied by sheep. If we suppose sixty or one hundred farms to be every year changed to the sheep system, the cattle from these will help to support the numbers at market. This propensity to stock with sheep must be gratified; but when fully gratified, it must have an end; for beef must be had at any price; and when the time comes, that the tables are to be turned against the sheep system, in favour of black cattle, they who discern the approaching change, and are prepared for it by breeding cows, will reap the fruits of their discernment.

In accounting for the numbers of black cattle at present brought to sale, we ought by no means to forget the improvement occasioned by the sheep themselves. They enrich the quality, and enlarge the quantity of grass within their walk, more than any other species of animals: they never deteriorate the soil; they render it always more and more productive; and wherever their numbers are increased upon a certain extent of land, they help to support the increase of their own numbers, by producing an increase of food. The ground is not only made green, and the heath extirpated by the enriching quality of their manure, but the finest grasses spring up spontaneously, where it had formerly been scanty and coarse; and when this powerful top-dressing of our whole hills with sheep dung and urine has been completed, there is little doubt, that, in a few generations, the Grampians will be as verdant as the Ochils; and that the Ochils had once as forbidding an aspect as the Grampians."

We defy any person to display the benefit of the sheep-husbandry, in stronger terms than here expressed. With the diseases of sheep, the Doctor appears intimately acquainted.

We observe the same reasons of complaint against the administration of the statute work, as have occurred to persons in other districts; nor is it surprising, that the evils necessarily attendant upon a defective system, should have been perceived by every man who has thought upon the subject.

subject. "The thing (the law) itself," as the Doctor wisely remarks, "is an error;" and "attempts to ingraft partial remedies upon what is radically wrong, generally increase the evil they are meant to correct."

The obstacles to improvement are stated to be, 1*st*, *Townships;* by which is meant a number of plough-gates in one village, or several tenants about one plough. 2*dly*, *Runrig*, or a mixture of property. 3*dly*, *Uncertain boundaries of estates.* 4*thly*, *Servitudes;* the evils of which are described in animated language. 5*thly*, *Thirlage.* 6*thly*, *Shortness of leases.* 7*thly*, *Distance from manure.* And, 8*thly*, *Commons;* which undoubtedly may be removed by the exertions of individual proprietors. We are sorry that the limits which we can assign to this article, prevents us from saying more upon those obstructions to improvements, than simply mentioning them.

The conclusion contains an animated picture of the advantages attending agriculture; upon which, most assuredly, men of all ranks, from the highest to the lowest, depend more than upon any other of the arts. The necessity of personal experience to make a good farmer, is likewise shown in a satisfactory manner. A quotation from Cicero is given, which is very applicable to the subject:

"Of all the sources of wealth or pleasure, none is more "sure than agriculture, none more productive, none more "delightful, none more worthy of man, none more be-"coming a gentleman."

An Appendix is given, containing, among other interesting papers, an accurate topographical description of the district surveyed. Such a valuable addition to the plan of the Board, must be highly advantageous to persons unacquainted with the county of Perth, though perhaps it would have appeared with greater propriety in the body of the work.

In a word, the Survey of Perthshire deserves to be classed amongst the most respectable of the works offered to the public, through the medium of the Agricultural Board. The author, in every page, displays an intimate knowledge of the human character and a marked desire to promote the real welfare of his country. He is eminently versant in the sciences of rural and political economy, and, if we are not mistaken, possesses a thorough knowledge

ledge of the several branches of practical husbandry. None of these works have yielded us greater satisfaction; and few of them have shown such instances, either of diligent research, or accurate detail.

N.

General View of the Agriculture of the West Riding of Yorkshire. Surveyed by Messrs Rennie, Brown, and Shirreff, in 1793. *With observations on the means of its improvement, and additional information since received. Drawn up for the consideration of the Board of Agriculture and Internal Improvement. By* ROBERT BROWN, *Farmer at Murkle, near Haddington, Scotland.* 8*vo*, 428 *pages.* Watson, Edinburgh; Nicol, &c. London, 1799.

(BY A GENTLEMAN IN YORKSHIRE.)

IT must be confessed, that the present grievous scarcity of the necessaries of life, may appear, in the eyes of the common people, a bad comment on the labours of the Board of Agriculture, and all other public institutions affecting these objects; but, alas! they possess no controul over physical causes, no means of supplying the want of sunshine, or of tempering the excess of cold and moisture, by which, in spite of every endeavour of the most judicious, the varied products of the soil are liable to injury and diminution. Perhaps, we shall be under the necessity of concluding, that the Board of Agriculture has done what can be done in existing circumstances: and much praise is due to its late able and indefatigable president, Sir John Sinclair, for the pains he has taken, in the acquisition of a mass of most useful information and instruction on the general rural economy of the island. This has clearly ascertained what are the real obstacles to more extensive improvement; and it is now left to the Government, and to those called the leading interests of the country, where alone the power resides, to remove those obstacles as speedily as possible. It is a most weighty responsibility,

sibility, and they would do well to take it under their immediate and serious consideration.

The subject of this general view, the West Riding of Yorkshire, is a district of very considerable importance. Though but a frithing, or third part of a county, it may vie with many of the most flourishing counties in the kingdom, in wealth and population, and in industry, rural and mechanical. Its soil, though various, is rendered generally productive; yet there is much room for improvement, the natural means of which it eminently possesses within its own limits; lime, &c. for manures; an agriculture tolerably enlightened and active; extensive trade and manufactures; the powers of which, on the improvement of the soil, require nothing but the fostering hand of legislative encouragement, for their complete developement, with effects almost incalculable. The abundant supply of coal, wood, and other materials, essential to the leading manufactures of this district, in wool and iron, added to all its other advantages, cannot fail to render it an object of survey peculiarly interesting; and the candid reader of the revised work, now published, will allow, with us, that ample justice has been done to it.

In the Introduction, the editor says, "Under the authority of the Board, my friends Messrs Rennie and Shirreff, and I, surveyed the *West Riding of Yorkshire;* and, during our progress, scarce a difference of opinion occurred respecting the matters which underwent our examination. We remained about five weeks in the district; and, during that time, used every means in our power to gain an intimate knowledge of the different modes in which husbandry was carried on, as well as the general and local impediments to its improvement."

Though inhabitants of a distant part of the country, and entire strangers to the district in question, before the present occasion, the surveyors have performed their task with a degree of liberal impartiality; and, though practical adepts in agriculture themselves, have evinced a disposition so candid and unobtrusive, in their remarks on defects, and in their recommendations of better practice, that this work cannot fail to insure the approbation of those competent to judge, among all classes of the people of the Riding, into whose hands it may fall; and surely it behoves every one of common intelligence, connected

with the interests of this Riding, either by inhabitancy or property, to peruse the work with that attention which the importance of it demands, and which all are persuaded will not be found defective of those circumstances of amusement and instruction, which constitute the pleasure and advantage of reading in general.

We are informed by the editor, that this is rather to be considered as a revised survey, or second edition of the work, containing, with additional matter of his own, such farther remarks as he deemed proper for selection, from the correspondence and notes written by various individuals on the broad margin of the first quarto edition, a number of copies of which were previously circulated among the cultivators of the district for that purpose, in pursuance of the general plan of the Board of Agriculture. This was perhaps justly concluded by that Board, the best means of obtaining real and authentic information on the rural economy of every part of the island. We are further informed, that the editor has ventured to proceed, in the execution of his part of the plan, on principles different at least from that recommended by that veteran Colossus of agricultural science, the celebrated Arthur Young; yet the defence of his conduct, in that respect, is perfectly satisfactory.

A useful table of contents is prefixed, containing, in fact, a brief analysis of the work, which is divided into eighteen chapters, with sections; and a valuable appendix, of some length, concludes the whole. In chapters 1st and 2d, are given the geographical state and circumstances, tenures, &c. in a compendious way. The surface of the Riding contains 2450 square miles, or 1,568,000 statute acres; and is divided into 9 wapentakes, 175 parishes, containing 28 market towns, with a great number of populous villages. Chap. 3d presents important practical matter to the agriculturist. The inconvenient situation of farm-houses, crowded together in villages, is very properly the subject of animadversion: an inconvenience resulting from the feudal system, and rivetted by long habits, which could not now be broken through without some difficulty. A sumptuous pile of farm-buildings, executed in a superior style of convenience, by Lord Hawke, at Towton, are here noticed; but we cannot suppose that such costly patterns can meet many imitators, though some parts

parts of this may be well worth the attention of a farm-builder. On the proper situation and distribution of a farm-house and offices, several judicious observations are given.

The salutary practice in Scotland, of paying the married farm-servants partly in necessaries, instead of wholly in money, as in England, is recommended to the attention of the West Riding farmers. In Scotland, they receive certain quantities of oats, barley, and peas, have a cow kept, and a piece of ground for raising potatoes and flax. This recommendation is very properly supported by the notes of correspondents; as it has an undoubted tendency to preserve the morals of the labourers, and to diffuse the blessings of a comfortable subsistence among their families; objects most shamefully neglected in many parts of England.

In chap. 4th, the *Mode of Occupation* is considered; and the writer notices the general inadequacy in the size of farms in the district, to an improved system of corn culture. It is true, that on a farm of less than 150 or 200 acres, the occupant feels himself shackled with a number of heavy horses, without constant employment for them; but, if the working of oxen were resorted to, the case might be very different; for, notwithstanding the arguments of many practical men against the utility of draught oxen, it remains a fact, that they will perform as much work, if properly attended to, as the clumsy cart horses usually kept by the farmers of Yorkshire, and many other parts of England. Whatever becomes of the question of large or small farms, small grass farms are much wanted almost every where; and it is remarkable, that grass farms bring a much higher rent than arable ones.

The discouraging custom of *tithes* in *kind*, is not forgotten; and some hints are given, of the necessity of its removal, before any great additional improvement can be attained to; but, on this subject, the hands of the surveyors have been in some degree tied up, by the injunctions of the Board of Agriculture. Such is the prospect of good from that Institution, that one of its primary mandates is, the prohibition of discussing an abuse, or grievance, which has long been sucking the heart's blood of English agriculture. The *poor's rates* are here considered, and perhaps justly, as inadequate to their professed end. A para-

graph is quoted, as containing information on this subject, and that of the tithes, not generally known:

"Previous to the period when the Reformation took place in England, the poor were supported at the monasteries, and other houses of the irregular clergy; it being then understood, that this was one of the purposes for which tithes were paid to these houses; and, after the suppression of the monasteries in 1543, great clamours ensued over the whole kingdom, in consequence of this support being withdrawn. The poor continued in a deplorable state till the 43d year of Queen Elizabeth's reign, when the laws for regulating their support were first enacted; and, whatever were the motives which operated on the minds of our Legislators to enact such laws, experience has proved, that the salutary consequences which they expected from them have been totally unfounded."

Leases are strongly recommended: They are perhaps essential to real improvements, unless some other security could be devised for the encouragement of the spirited and well informed occupant. Of the effectual utility of this mode of letting land, the prodigious improvements made by the tenants on the Duke of Norfolk's estate, at, and in the vicinity of Sheffield, are adduced as instances in proof. Yet much may be said on both sides: Perhaps the land-owner is generally more a gainer by letting his property on lease, than he is aware of, every thing considered; and let the tenant be cautious how he takes a long lease, at a high rent, and subject to all increasing taxes in "existing circumstances." The remarks on covenants and restrictions in leases are liberal and enlightened; which having excited a discussion between the editor and a gentleman of the district, we may observe, that the arguments of the former have a decided superiority.

In chap. 5th, the *usual implements* are examined, and some improvements are, with great judgment, suggested in ploughs, carts, &c. Light carts, for one or two horses, are recommended to attention, in lieu of the heavy lumbering tumbrils usually drawn by three. The practice of yoking horses for ploughing in pairs, without drivers, is commended and enforced; but the West Riding is too justly accused of glaring defects in the construction and management of their ploughs and wheel-carriages.

This

This chapter is chiefly occupied with a particular and valuable account of that important acquisition in the agricultural art, the thrashing mill, the merit of which invention appears due to North Britain.

Chap. 6th. The *enclosing of lands*, both in wastes and fields, is ably recommended;---the question, as affecting population considered, and clearly decided in favour of this mode of occupation. The following paragraph contains a sound, if not a new observation:

"Another thing which has escaped the notice of these gentlemen is, the nnmber of people who receive employment from the hides and skins of the animals depastured on grass land. While they examine the field, they perhaps do not see a single person amongst the bestial: Hence they set down at once, that the grass-system is destructive to the population of the country. But let them consider the number of curriers, shoemakers, woolcombers, and other manufacturers, who are thereby provided in work, and they will allow, that an acre of grass affords employment to as many people as an acre of corn land. This point is so clearly elucidated in the Hereford Survey, that we beg leave to refer the candid inquirer to it for a full proof."

In fine, the whole reasoning on this point is supported by incontestible arguments.

In chap. 7th, on *arable land*, sect. 2. the question of Summer-fallowing on clay or strong soils, of late so much agitated, comes again under discussion; and the author has to combat the opinions of those great authorities, Marshall and Kent, who have advanced many ingenious theoretical arguments against the practice which, though confessedly specious, must yield to the sound and practical proofs adduced by our author in favour of it. The hints here offered by the surveyors, for conducting the operation of a complete Summer-fallow, are highly deserving of the attention of every farmer; and we are decidedly of opinion, that, in the districts in question, this business is too generally performed in a careless and slovenly manner.

In section 3. are given sketches of the usual *rotations of crops*, &c. on several farms of various extent in the Riding. We cannot withhold from our readers that of a farm in Marsh-land, as it affords an instance, almost peculiar, of the employment of such a number of hands and horses, and succeeded by such abundant and useful products.

"The rotation of crops pursued upon a Marsh-land farm, consisting of 432 acres of arable land:—The soil where the principal part of the potatoes are grown, is a good warp; the other part, on which potatoes are also cultivated, a mixture of warp and sand; the remainder of the land, clay, with a small portion of warp, but too strong to grow potatoes, except about 70 acres, which is tolerably good potato land, but at too great a distance from the river. Grass land only sufficient to keep two milch cows, and horses necessary for working the farm: 69 acres of the best warp land, divided into three equal parts: 1st, fallow with from 16 to 20 loads of manure *per* acre; set it with potatoes; after, sow wheat; and then fallow again: 3 acres of the same kind of land, that is liable to be damaged by sparrows, when sown with corn, is set with potatoes every year, with about 10 loads of manure *per* acre each year: 84 acres of the lighter land is divided in the same manner, one third fallow, with 10 loads of manure *per* acre; set potatoes, and then sow wheat; and fallow again: 42 acres of land, lately an old pasture, divided into three parts; one-third flax, then sown with rape, and, after they come off, plough and harrow the land three or four times, and lay upon it about 20 loads of manure *per* acre, which will make it in great condition; after which, set potatoes, then sow flax again, and rape after: 150 acres divided into three parts; 1st, fallow; 2d, wheat; 3d, beans, drilled, at nine inches distance, hand-hoed twice, at 6s. *per* acre; fallow again, &c.: 80 acres of land that was lately in old grass, divided into four parts; fallow, wheat, beans drilled, and oats; then fallow again, &c. The remaining four acres thrown to any of the crops that are likely to fail. Rent 25s. *per* acre; assessments, 5s. *per* acre.

Distribution of crops for 1795.

	Acres.	Average prod. of an Acre.
Wheat - - -	121	from 3 to 5 quarters.
Beans - - -	70	from 3 to 6 quarters.
Oats - - -	20	from 6 to 10 quarters.
Flax - - -	14	from 45 to 55 stones.
Rape - - -	14	from 4 to 5 quarters.
Potatoes - - -	68	from 60 to 100 sacks.
Fallow - - -	121	
To be thrown where a crop is likely to fail -	4	
	432	

Servants,

Servants, horses, and cows, kept upon the farm:

4 Labourers,
16 House servants,
26 Horses,
2 Milch cows.

"The above is an account of a farm, belonging to the best manager in Marsh-land. We must observe, he fallows his land very often; yet he is well paid by his superior crops. The last year (1795) he had 100 sacks *per* acre off most of his potato land; and sold them from 8s. to 12s. *per* sack of 14 pecks. All their corn is sold by the quarter of 8 Winchester bushels, though I believe their measure rather overruns."

(To be concluded in our next.)

PART III.

EXTRACTS FROM AGRICULTURAL PUBLICATIONS.

Extracts of the Evidence given before the Committee of the House of Commons, appointed to inquire into the Scarcity of Provisions, &c.

Examination of Mr CLAUDE SCOTT, *Corn Merchant.*

What is your opinion, from the best information you have been able to obtain, of the produce of the last harvest, as to wheat?

In general, I understand the produce turns out to be unusually defective; on the whole, I question whether the produce will turn out more than half a good crop; for in the most productive counties, such as Essex, Kent, and Suffolk, I understand the medium produce is not more than two quarters *per* acre; the quality, however, is good. In other counties, particularly the northern counties, the harvest has been less productive, and the quality unusually bad.

What prospect do you conceive there is of a supply of wheat from foreign countries?

I think, generally, the supply will be moderate; the crops in general abroad have not been very productive; and, in some parts, where we usually look for supplies, the exportation has lately been prohibited. Our principal source of supply may be looked for, this year, from the Baltic, and chiefly from Poland; for the produce of the harvest, in the Prussian provinces bordering on the Baltic, has been unusually bad, and the quality very light and inferior. The King of Prussia has already prohibited the export of all other grain but wheat; and it is apprehended, that prohibition may be extended to wheat; particularly in the event of a further advance in the prices in Great Britain, which might create an alarm in those countries. Some quantity of wheat may also be expected from Russia, but I have no means of ascertaining how much. The exportation of corn is strictly prohibited from Holland, Flanders, and France. By very recent information from Havre de Grace, I am informed, that the crop of wheat in France is one third less than the preceding year; the prices one third higher: but compared to the price in other countries, they are very low. With respect to America, by the last advices, which came yesterday, dated Philadelphia, 25th December last, and by previous advices, the produce of the crop in America, last year, exceeds that of any year for the last seven years; but far short of what has been the produce preceding that period: the reason is, the devastation committed by the Hessian Fly, which has discouraged the growth of wheat. The prices of flour, including all charges of freight, &c. would stand in about 90s. *per* sack; and of wheat, about 100s. *per* quarter. I understand, likewise, that a quantity may be expected from Canada; but I have no information what quantity, or at what prices.

Do you conceive that there are any means, and what are they, of economizing the quantity of wheat now in the country?

From the opinions I have collected from all persons concerned in the corn trade, and which coincide with my own, I do not know any better means of economizing the consumption of wheat, than by recommending to the public not to eat any bread until it has been baked a certain number of hours.

Do

Do you conceive, that prohibiting the millers from making more than one sort of flour would or would not lead to any economy of that article?

I do think it would not, because I believe that nearly the whole produce of the wheat is consumed directly for human food, and indirectly so in the support of swine and poultry; a small part is likewise used for horses.

From your own experience, do you know whether coarse flour or fine flour will keep longest without damage, and will bear best the water carriage?

Most undoubtedly fine flour will keep longest in any situation; and that, I think, is proved by the American flour, which is the finest in the world, keeping in good condition much longer than any other flour of the best sort in Europe. The greater the mixture of bran in any flour, the greater tendency there is to fermentation.

What do you mean by a good crop of wheat?

That which, of itself, is sufficient to supply the consumption of the country.

As half the supply necessary for the consumption of the country is deficient, how do you suppose that deficiency will be made up?

I consider there was a great surplus, at the commencement of this harvest, of the produce of the last year, perhaps two months consumption of the country, and also a quantity of foreign wheat, that was in different parts of the kingdom; nevertheless, I am clearly of opinion, there will be no possibility of obtaining a quantity of wheat sufficient to supply the quantity usually consumed of wheaten bread.

Do you know what has been the state of the crops of barley and oats?

I believe they are, in point of quantity, pretty good, but badly harvested, and in quality exceeding bad. I speak of the southern parts of England.

Can any considerable supply of these articles be expected from foreign countries?

Some oats may be expected, but less in quantity than in any year I remember. With respect to barley, I believe, the importation will be much less. We import very little barley at any time.

Examination

Examination of Mr ARTHUR YOUNG.

HAVE you any information respecting the produce and quality of the last crop of wheat?

I have had letters from most parts of the country, the purport of which is, that the deficiency of the crop generally amounts to one third; but from various persons, I had second and third communications correcting their statements, as they advanced in thrashing, which makes the deficiency still greater, in some cases amounting to one half. The deficiency that has been corrected in the second and third accounts, includes quality as well as quantity; from which I conclude, if similar accounts were received from other correspondents, the deficiency would be found to amount to more than one third.

When you state that the deficiency of the crop amounts to one third, or one half, do you mean one third or one half of an average crop, or of an abundant crop.

I always mean one third of an average produce.

How many bushels do you allow, per acre, in your computation of an average crop?

Something between twenty-two and twenty-four.

Have you any information with respect to the stock in hand at the period of the last harvest, and the quantity of foreign wheat in the country at that time?

I know nothing of the quantity of foreign wheat; but my information is, that the stock on hand was very small (probably not one month's consumption) in the country. I had no information what stock there was in London. I speak of the end of the harvest, which was very late.

What is your information respecting the last crop of barley, oats, and rye?

The produce of barley and oats deficient, perhaps, one fourth or one fifth in point of quality; in some places the crops worse, but varying considerably; in other places, the crop equal to an average one in quantity, but in point of quality miserably bad, insomuch that I know of farmers that have sold barley from 20s. to 60s. per quarter from the same farm; and I have had information which seems to confirm this account, which is, the price of oat flour in Westmoreland, and that is 4s. 6d. the stone of 14 lb., being the same prices as wheat flour in Suffolk, with wheat of 11s. 8d. per bushel. With regard to rye, I have no particular information.

Have

Have you any opinion respecting the consumption of wheat?

It is about one quarter per head on the population of the country, among those who live upon wheat; and this seems the settled result of all inquiries on the subject.

Can you suggest any means of economizing the expenditure of wheat?

I think the present scarcity so truly alarming, that no economy whatever, upon the mode of consuming wheat, will answer the exigency of the moment. In Suffolk, attempts have been made, and are now making in some parishes, to mix barley and rye with wheat, and to make a browner sort of wheaten bread; but the distress of the poor is great, notwithstanding every effort of this sort. In regard to a standard wheaten bread, I cannot see any considerable relief that can result from it. It seems to me, that the whole flour of the wheat, reckoning that flour at about 45 lb. in 60 lb. of wheat is eaten at present. Something much more effectual than this is absolutely necessary; and I venture to propose, as an opinion, that nothing short of stopping the consumption of oats by horses, or importing rice to a very great amount, or extending the use of soup almost generally, will be equal to the demand occasioned by the scarcity.

I beg to mention a circumstance respecting soup: I made a copper full of soup every day; and in order to try the effect of the leanest meat that could be procured, I killed ten of the very leanest sheep there were in a flock of 500; and that effect was exceeding good. To each copper containing 30 gallons, I put one sheep of from 25 lb. to 30. lb., a peck of potatoes, half a peck of onions, a peck of carrots, a peck of turnips, half a peck of peas, and 6 lb. of rice, and it made most excellent soup, which the poor relished exceedingly; and the out-setters of the parish, who lived five miles off, came for it very readily; from which I conclude, that one very great resource for the kingdom at present, is the establishment of soup shops, or perhaps rather to enforce all parochial assistance whatever to the poor, universally, to exclude the consumption of wheat; which, if general, would do more to alleviate the present scarcity, than all assizes of bread that can be devised.

PART

PART IV.

AGRICULTURAL INTELLIGENCE.

INDEPENDENT of the inauspicious circumstances which attended the conclusion of the preceding year, the first quarter of 1800 may be considered as tolerably favourable to the general purposes of husbandry; and, in the arable districts, the labour of the season is almost as far advanced as in ordinary years. The weather in January was variable, which prevented the ploughing from going steadily forward. February was, upon the whole, a dry month, and a considerable quantity of wheat and oats were sown upon light soils. A severe frost about the beginning of March prevented the further progress till the middle of the month, when fine weather set in, which has been improved to the utmost by the generality of husbandmen.

It would have given us pleasure to present a statement equally favourable of the rural economy of the higher districts, which comprehend more than one half of North Britain: this is unfortunately not in our power. From respectable sources of information, we learn, that ploughing in these situations is very far behind; and that the different storms which have prevailed since last harvest was finished, have not only prevented field work from being executed, but also much injured the stock of cattle and sheep. Fodder, which was originally scanty, and inferior in quality, is in many places nearly exhausted, while the grain on hand is generally unproductive and unsound, yielding a small portion of nutritive food to the inhabitants, and hardly fit to be used for seed. Several counties are in this respect more deplorably situated than in the year 1782, when supplies of meal and seed corn were benevolently provided by the landed proprietors and the public.

Those who reflected upon the disastrous circumstances which almost uniformly accompanied the crop 1799, from its being put into the ground till it was gathered into the stack-yard, early predicted, that a very great advance

vance in the price of grain would necessarily follow, which, unhappily for the country, has taken place in the articles of barley, oats, and peas, to a degree above what was ever experienced. Meal has of late bore a price exceeding any thing known in Scotland; and, unless some substitute or other is procured, there is serious cause to apprehend, that the increased demand from the unproductive districts, will occasion a general scarcity of that article during the Summer months. Were it not for the free transit of corn over all Scotland, several places would be totally unprovided; and we observe with pleasure, a late decision of the Supreme Court of Justice upon this point, which, under existing circumstances, must be productive of beneficial consequences to the public welfare.

The Legislature have not been inattentive to the distresses of the country, but have used a variety of expedients, with a view to lessen the evils of scarcity, and prevent it from being felt in a more alarming degree. It admits, however, of some doubt, whether the issue of these measures will accomplish the proposed end; for a deficient crop can never supply the ordinary demand: And as other parts of Europe have been also visited with adverse weather, it is evident that the strictest economy will be necessary, to make the stock in hand, even when aided by the expected foreign supplies, answer the unavoidable consumption.

In North Britain, a scarcity of oat-meal, which is the chief food of the great body of the people, is seriously to be apprehended; and this, in all appearance, can alone be remedied by limiting the quantity given to pleasure horses, or those not employed in useful purposes. The working stock, in fact, from the inferiority of the grain, require a greater abundance than usual, and any curtailment would be succeeded by double loss afterwards; but those of a different description may be safely restricted from the use of oats, without any real injury to the owners, but with much advantage to the public.

Under all the calamities of this memorable year, it must and ought to be recorded, to the honour of the lower ranks, that they have been generally disposed to submit to them with patience and fortitude. In country parishes, meal has been sold at prices very much reduced;

ed; but, in great towns, the case of working people has not been attended to with so much commiseration. Perhaps, with equal good intentions, it is impossible, considering the number of those who stand in need of assistance, and the different modes required to be taken for raising the necessary funds, to give relief to the same extent. It is obvious, however, that the families of the working people cannot be supported, unless wages are either raised much higher than has usually been paid for labour in this country, or that meal is provided for them greatly below the market rates. This subject is important; but we forbear saying more, trusting that every thing will be done by those provided with the means, for alleviating the distresses of the lower ranks, upon whose welfare so much of the prosperity of the country materially depends.

[The following Articles, among a number of others sent us, were *omitted* in last Number for want of room.]

From the Newspapers, with Remarks by a Correspondent.

THE comparative advantages of the labour of horses and oxen, have been for some time under the consideration of the public. His MAJESTY has unquestionably tried the latter upon a larger scale than any other person, as he does not work less than 180 oxen upon his different farms, parks, and gardens, and has found them to answer so well, that there is not a horse now kept for tillage. Upon the two farms, and the Great Park at Windsor, 200 oxen are kept, including those coming on and going off. Forty are bought in every year, rising three years old, and are kept as succession oxen in the park; 120 are under work, and 40 every year are fatted off, rising seven years. The working oxen are mostly divided into teams of six, and one of the number is every day rested; so that no ox works more than five days out of seven. This day of ease in every week, besides Sundays, is of great advantage to the animal, as he is found to do better with ordinary keep, and moderate labour, than he would do with high keep and harder work.

These

These oxen are never allowed any corn; as it would prevent their fattening so kindly afterwards.—Their food, in Summer, is only a few vetches, by way of a bait, and the run of coarse meadow, or what are called lea-sowes, being rough pastures. In Winter, they have nothing but cut food, consisting of two-thirds hay, and one-third wheat straw; and the quantity they eat in twenty-four hours is about 24 lb. of hay, and 12 lb. of straw; and, on the days of rest, they range as they like in the straw yards; for it is to be observed, they are not confined to hot stables, but have open sheds, under which they eat their cut provender, and are generally left to their choice to go in or out.

Under this management, as four oxen generally plough an acre a day, and do other work in proportion, there can be no doubt but their advantage is very great over horses, and the result to the public highly beneficial.

The forty oxen that go off, are Summered in the best pasture, and finished with turnips the ensuing Winter.

A correspondent remarks——'The above is so contrary to the experiments made respecting the working of oxen, that I am inclined to call in question the accuracy of the statement. In the *first* place, A yoke of oxen will not plough an acre of ground *per* day, unless a broad furrow is taken. *2dly*, They are incapable of undergoing five days constant labour *per* week; it being found necessary, in ordinary cases, to keep two sets, the one to relieve the other. *3dly*, They cannot be properly supported (as we of course must suppose his Majesty's oxen to be) upon 36 lb. of hay and straw *per* day. The comparative value of oxen and horses in husbandry having been a fertile source for disputes betwixt practical and theoretical men, it would give me great satisfaction to see the question fairly argued in your Magazine.'

London, Dec. 17th.——The Magistrates of Worcester have given notice, by public advertisement, that all persons guilty of forestalling, regrating, or ingrossing provisions, are punishable by indictment; and of their determination to proceed against all such offenders with the utmost severity.

Upon the above paragraph, a correspondent observes, 'That these obsolete terms, forestalling, regrating, and ingrossing, continually get into the mouths of our municipal officers, whenever provisions rise in price, whether they are in the least degree applicable or not. He would ask the sapient authors of the advertisement, who, it is presumed, are manufacturers, whether a piece of broad cloth, sold and resold at every stage betwixt Worcester and London, would sell, at the latter place, a single half-

penny

penny *per* yard higher, than if it had been directly received by the waggon? Just the same consequence will take place in the sale of beasts or grain. When carried to Smithfield or Mark-lane, they will draw their comparative value, whether 5l. or 5s. of profit had been previously gained upon them. Many, otherwise sensible persons, entertain very absurd ideas upon this subject; which can only be removed by practice and experience.'

The Duke of Bedford is elected President of the Bath and West-of-England Agricultural Society. Lord Sommerville and Mr Hobhouse are elected Vice-Presidents.

Sir John Call, Baronet, has written a letter to the above Society; in which, after dwelling at considerable length on the subjects of Population and Agriculture, he says, 'But, taking the data and facts as they are, and as they stand incontrovertibly, it is clearly deducible, that Great Britain must either continue to import a considerable portion of the first article of subsistence, and thereby give an additional bounty on foreign cultivation; or that 160,000 additional acres of land must forthwith be brought into tillage, and 30,000 added yearly to that number, to provide for an annual increase of 10,000 souls in the population.

'Without such a resource, starvation or emigration must ensue; for I will not suppose that any legal or political stop will be put to the increase of mankind. It then becomes a question seriously to be decided, Whether Great Britain, as a commercial island, depending greatly on the cheapness and excellence of her manufactures, for the support and extension of her commerce, and, of course, the maintenance of her power, should depend, in a great degree, on foreign nations for her daily bread? If that important point is unanimously discussed in the negative, the argument for bringing every inch of waste or unproductive land into an immediate state of inclosure and improvement, is supported by an imperious necessity; and it will become a duty, in the highest degree incumbent on the Legislature, to meet and provide for this growing demand.'

The good sense and liberal views discovered in the above letter, entitles Sir John Call to the warmest tribute of thanks from his countrymen. The subject is truly an important one; and, to the shame of British legislation, has been by far too long neglected. Many millions of acres in England are capable of being converted into rich corn fields; which, at present, are almost, in a legal manner, locked up as waste.

Edinburgh,

Edinburgh, Dec. 20.—Last week the Magistrates of Aberdeen fined a person for *couping* meal, or buying it from country people when coming to market, and selling it at an advanced price.

The above is another instance of municipal wisdom. Could this poor *couper* sell the meal one farthing per peck higher than what the country people would have done, to whom it originally belonged? Whenever the purchase was made, the one stood in the shoes of the other, and consequently was entitled to all the after profits, just in the same way as if he had bought *a parcel of stockings*.

EXTRACTS FROM PRIVATE CORRESPONDENCE.

SCOTLAND.

Edinburgh, March 10. 1800.—By a letter from a gentleman in Virginia, dated the 18th January last, we learn that tobacco has been falling in price for a considerable time, and can now be bought at 17s. or 16s. per cwt. Good wheat sells at 6s. 9d. Sterling per bushel; and flour 8½ to 10 dollars per barrel of 1¼ cwt.

Extract of a Letter from Aberdeenshire, March 11.—The state of the crop this year is very bad indeed; and I have no occasion to suppose that there will be one half of the *oat-meal* produced this year which we had in 1798. I should rather suppose, from some inquiries which I have made at different mills, that the quantity will not exceed two fifths of the preceding year; for there is not above four fifths of the oats which were raised in 1798; and the average of meal from the boll is rather above than below 8 pecks, or 4 stones Dutch weight.

The state of the forage in the higher parts of this county is still worse than that of the crop. I have heard of corn and straw being sold as high as 4l. Sterling per boll, and of young cattle being sold for a mere trifle. We have had another storm

lately. If the weather does not set in mild in a very short time, many of the cattle must perish for want of food.

I consider that the comfortable, if not the necessary supply of the people of Scotland, for this year, depends upon two things: 1*st*, The stoppage of the English distilleries: 2*dly*, The mixture of barley meal with oat meal or flour.

It is much to be apprehended, that bad seed will be used by many farmers, partly from ignorance, and partly from necessity. The danger is, I suspect, not sufficiently understood. In 1782, a severe frost on the 3d August was very hurtful to the earliest and best oats, which were then in flower, or in the milky state; it rendered them unfit for the purpose of seed, though it did not stop their vegetation. The later oats, which were of much less value for meal, were incomparably better for seed, because they were not in flower when the severe frost happened in August. But this year we had severe frosts at different periods of the harvest, and especially in September, when the late oats were in the flower, or in the milky state; and I apprehend, that nothing but actual trials can justify the farmer for sowing one parcel of oats in preference to another. The experience of 1782, may tend to mislead those who do not consider the difference of circumstances; and the apparent freshness of grain is no criterion for its being fit for the purpose of seed.

Oats no doubt are a hardy kind of grain, as nature has furnished it with a *great coat* to defend it from the inclemency of the weather; but it is when the plant is in flower, and before this great coat can be buttoned closely, if I may use the expression, that its powers of vegetation are most easily and most deeply wounded.

Extract of another Letter from Aberdeenshire, March 18.—Our county is really in a deplorable state; for the fields are this day covered with a deep snow, and the straw for our cattle is almost consumed. Bear, with fodder, has given 4l. per boll, and oats, not fit for seed, 2l. 10s. per ditto, Aberdeenshire measure. Hay sells at 2s. per stone of 20 lib. Amsterdam; but, what is worst of all, it is difficult now to get it in this corner at any price. I rent a farm at 50l.; and this day there is not more ploughed than 10 bolls of oats will sow. Many of my neighbours have less in proportion, and few of them more. The poor have been supplied with meal on lower terms than with you, and yet they are run of money, and credit is ill to be had. Best oat meal 1s. 10½d., and bear meal 1s. 4d. per peck of 9 lib. We are getting seed oats from the Garioch, at 1l. 12s. per boll, and

and from the country about Kincardine O'Neil and Banchory, at 40s.

I have had occasion to notice both the theory and practice of raising early potatoes; but have found the following method most efficacious for obtaining an early crop:—Take the potatoes whole, and cover them up in horse litter of a moderate warmth; let them remain there until they put forth shoots of 4 or 5 inches in length, which they will do in two or three weeks; then take them carefully from the litter, and put them, perpendicular and equal with the surface, into a light dry soil, with more horse dung. If the season is tolerable, they will vegetate amazingly fast. In this cold country, the last week of April, or first of May, is early enough to venture them out. By these means, potatoes may be had four weeks earlier than the same variety can be raised in any degree of perfection, were they planted in the usual way. The above was communicated to me by a reverend clergyman of my acquaintance, who has practised it a dozen of years, and who has ripe potatoes commonly at his table by the 4th of July. Northward of the Grampians, we are at least a month later than you are in the Lothians.

Berwickshire Quarterly Report.

Turnips, which from the beginning could scarcely be reckoned half a crop, suffered a good deal by the frost. They were mostly consumed by the last week of March, though every means was used to save them as much as possible.

Young *clovers* do not appear to have been injured during the Winter; but vegetation is very backward; and those few fields which were sown in Autumn, have not a promising appearance.

A considerable quantity of *wheat* has been sown upon dry soils during this quarter, after turnips, &c.; but, upon the cold lands, the greatest part of the fallows must now be sown with other grain. Sowing of *peas*, *beans*, and *oats*, did not commence generally till the middle of March; since which, these operations have been carried on with the greatest activity, the land harrowing better than could have been expected from the bad weather immediately preceding; a good deal of hot seed peas are sown in different places.

There are few cattle now remaining in this county; indeed the number put up to feed was (in consequence of the failure of turnips) comparatively small. Of the sheep that were fed, a considerable proportion has been already disposed of. Lean

stock is likely to sell well in the course of the Spring, and already bring good prices.

In consequence of the long continued rains in Autumn, the rot has been more than usually prevalent amongst the sheep in particular situations. The lambing season has been hitherto favourable in the low part of this county, and the grass is just beginning to shoot.

The Winter has been severely felt in the Lammermuir district of this county. Great numbers of young sheep have died; and from the lateness of the harvest, and long continuance of frost and snow, very little had been got ploughed before the middle of March, which will make the small quantity of corn sown there very late.

The corn markets kept advancing till the beginning of March, since which all the grains have declined a little, except barley, which still keeps its price.

Prices at Berwick, March 22d, per boll of 6 Winchester bushels, were,

	s. s.		s. s.		s.
Wheat	60 to 70	Oats	35 to 45	Portlands	50
Peas	56 to 60	Barley	40 to 42	Fine	45

Seed potatoes 40s. per Berwick boll of 40 stones.

The butcher markets have experienced a gradual rise from the beginning of this quarter, and still keep advancing.

Prices at Berwick, March 22d, per lib. of 16 oz. English.

	d. d.		d.
Beef	5 to 7	Veal	8
Mutton	5 to 6½	Pork	7

March 26.

Fifeshire Quarterly Report.

During the month of January, neither ploughing, nor indeed almost any other kind of work could be carried on without doors in the county, as the fields were covered with snow. Even in the month of February, the labours of the field made but little progress, the ground being either bound up with frost, or too wet for ploughing. Some ley land, in favourable situations, was broken up; and towards the end of the month, and beginning of March, several fields designed for wheat, but which had lost the season in Autumn, through the badness of the weather, have been sown. The present month has been exceedingly favourable to the farmers.

ers. Much land has been tilled, and the sowing of oats is far advanced. The land being in fine order for tillage, and the seed having got a dry bed, it is to be hoped that the crop will be good. The sowing of beans and peas is not so extensive as usual, owing to the high price of seed. The farmer cannot seed an acre of beans under 3l. 10s., when sown broad-cast, which is frequently practised in this county.

Current Prices of Grain during the last three months.

1800.		s. s.
January.	Wheat, from -	23 to 35 per boll.
	Barley - -	20 to 30
	Oats - -	16 to 25
	Oat-meal -	32 to 34
	Peas and beans, none exposed to sale.	
February.	Wheat, from -	25 to 42
	Barley - -	22 to 30
	Oats - -	21 to 28
	Oat-meal -	34 to 38
	Peas and beans -	25 to 32
March.	Wheat, from -	30 to 48
	Barley - -	25 to 35
	Oats - -	25 to 40
	Oat-meal -	38 to 48
	Peas and beans -	27 to 32

During the last three months, the price of potatoes has been gradually advancing, and risen from 12s. to 20s. per boll of 24 Dutch stone. The price of hay, of clover, and rye-grass, from 1s. 6d. to 2s.; and meadow hay 1s. per stone. Thatch of wheat straw 8s. the threave of 24 sheaves a yard round.

The great difference in the prices of the same kind of grain, is owing partly to the great difference of quality, and partly to the progressive rise.

Northern Quarterly Report.

The crop in the northern counties of Moray, Nairn, Inverness, Ross, Sutherland, and Caithness, has turned out fully as productive as was expected, and will do more than supply the consumption of the inhabitants. Within the last two months, there has been cleared out at the different ports within the precincts of Inverness Custom-house, 2,260 quarters of oats, 1700

quarters of barley, 2020 quarters of wheat, 6 quarters of peas, and 62 bolls of oat-meal. And from the county of Caithness, a considerable quantity has been shipped during the same period. Perhaps there may remain 10,000 quarters of the different grains for exportation; and it is supposed that the crop of no county in the kingdom will come nearer the usual average than that of Caithness, notwithstanding its northern situation.

The prices of grain are, for

	s. s.		s. s.
Wheat	40 to 45	Peas	30 to 34
Barley	30 to 36	Oat-meal	24 to 32
Oats	25 to 42	Potatoes	20 to 24

The latter is much demanded for seed. Butcher markets continue well supplied. Beef 5d. to 6d. per lib.; mutton much about the same; and, from the number of fat cattle still on hand, these articles are not expected higher. Hay has not exceeded 1s. per Scots stone this season.

Notwithstanding the severity of the Winter and Spring, little loss has been sustained amongst the sheep flocks; and respecting the prices of them and cattle, nothing certain can be yet given. The great scarcity of provender has put the latter in bad condition; and where they are used in farm labour, this may occasion the sowing of the crop to be much retarded.

The constant frost and the frequent falls of snow, which prevailed from the 17th December to the 12th March, allowed little ploughing to be executed till lately; but the Spring has now set in very favourably, and the ground is in excellent condition for ploughing and harrowing. The oat and peas seed has become general; and, upon the whole, labour cannot be considered as farther behind, than it is upon an average of years. In the Highland districts, they seldom begin to plough before the 1st of March; and consequently, in that respect, they are not in a worse case than usual.——*March* 27.

East-Lothian Quarterly Report.

Notwithstanding the adverse weather that prevailed during the first month of the current quarter, and the backward state of vegetation at its commencement, the labours of the field are now much farther advanced than what was then expected. In the lower district of the county, where corn crops is the chief object, a considerable quantity of wheat, though not to the

usual

usual extent, has been sown; the oat and bean seed is nearly finished. Some barley upon the dry soils, after turnips, is sown; and a few fields of potatoes are also planted. Some of the coast-side farmers have already concluded their seed work for this season; and almost in every situation the land has harrowed well, being completely mellowed by the repeated black frosts, which have brought the strongest soils into a reducible state, as fast as they were ploughed up.

The markets for grain, with the exception of wheat, have continued rapidly to advance, though, perhaps, the demand from the higher districts for seed corn has occasioned a temporary rise. Wheat, which is now dry, and in a condition for keeping, sells from 36s. to 51s.; barley, 35s. to 46s.; oats, 34s. to 46s.; beans, 30s. to 50s.; peas, 45s. to 52s.; and tares at the enormous prices of 60s. and 80s. per boll; all Linlithgow measure. Oat-meal, 3s. per peck in retail; and common potatoes for seed, 30s. per boll, of 24 stone Dutch weight. Some of the early varieties have sold as high as 4s. per peck. Vegetables of all kinds are scarce; and, in some places, can only with difficulty be procured.

The *Turnip* crop, which was much injured by the late frosts, is now nearly consumed; owing to which, it will be difficult to carry on the small portion of fat stock on hand. Barley, in some instances, has been boiled and given to cattle; which is found to answer well, though the expence is very great. The early ewes are lambing fast; and every exertion has been made to bring stock of every description into condition for an early market.

Grass land has this year met with a most extraordinary rise, which does not afford room to suppose that butcher markets will soon be reduced to their usual rates. Perhaps, the prices of grain have occasioned a number of fields, commonly kept in pasturage, to be broke up by the plough; but whatever has been the cause, the rise has been general, and, in some instances, gone the length of 50 per cent. above last year's rates.

The higher district of the county is in a most distressed state, as very little ploughing is yet performed, and hardly any of the last crop can with safety be used for seed. Fodder is very scarce; and a considerable mortality has taken place among the hogs, or young sheep. Great ewes may be stated, as selling from 6d. to 18d. higher than last year. At Gifford Spring Fair, a pretty large show was presented, which in general were sold.

Hay experienced a declension in price about the first of February, and now sells from 1s. to 1s. 4d. per stone, or from 4l. 10s. to 6l. per load. The quantity on hand is not great; but if the weather continues favourable, the working stock will probably be early put to grass, which may lessen the demand for that article.

Upon the whole, the first quarter of 1800 might have been considered as highly favourable to the farmer, if rural economy had not remained in such an imperfect and backward state at its commencement. A doubt can hardly be entertained, but that the half work given to last year's fallows, and the constant humidity which prevailed till the middle of February, must have great influence upon the ensuing crop. Still, under all these disadvantages, the husbandry of this district deserves to be viewed in a superior light to what, three months ago, the most sanguine person could have reasonably expected.—*March* 31.

Extract of a Letter from Kelso, March 25.—Grain of all kinds has been rising every week; and, in particular, oats for seed have got up to the amazing price of 50s. per Berwick boll of 4 firlots. There is a great want of seed-oats, owing to the general failure of the crop upon the higher grounds. Few beans or peas will be sown this season, as the price is so extravagant. A considerable quantity of wheat was sown the latter end of February, and beginning of this month, upon the turnip and bare fallows; and, in general, we have got a wonderful good season. Barley seed will commence in a few days; the present price is about 50s. per Berwick boll, but expected higher. It is my opinion, that a vast quantity of land of the inferior quality will not be sown this season; and that the farmers upon the high grounds will be put quite out of their usual rotations, to the great injury of their stock. With respect to the market for fat beasts—Feeders have been hurrying on their stock for these three weeks past, owing to the want of turnips; consequently, the market has been so much overstocked, that sheep of 20 lib. per quarter have fallen 10s. Beef has maintained its price pretty well, being worth 7s. 6d. and 8s. per stone of 14 lib. avoirdupois, sinking the offal. Those who can carry on till May-day, (and few will be able), may expect a much higher price, there being few on hand, compared with the stock of former years. The young and breeding stock are in general in bad condition; a great quantity of the former are already lost; and the appearance of a crop of lambs is so bad, that it is almost certain that lean stock will be very high.

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We are all turned great economists in the articles of flour, oat-meal, and mixed bread. After shealing the wheat, no bran is taken out of it; and potatoes are used as substitutes for oat meal and bread. A considerable quantity of this valuable esculent root, of the early kind, is already planted. I do not remember to have seen so little straw in the stack-yards at this season; and I need not add, that there will be little corn to the bulk.

Mid-Lothian Quarterly Report.

During the whole month of January, from the prevalence of snow, rain, or hard frost, very little field work was done, even in the low parts of the county; while, in the moorlands, there was nothing done at all, except merely leading in, from time to time, as it could be got thrashed, the miserable remnant of the preceding crop. In February, the weather softened gradually to a more genial temperament; and, although generally attended with frost during the nights, admitted the different operations of ploughing and sowing, there being a considerable proportion of the wheat land finished in this month, that was unavoidably postponed from the Autumn season: some oats and beans were sown, and even potatoes planted, all in pretty good order. The state of the weather in March was not so favourable. From the 4th to the 10th inclusive, the frost prevented all tillage; and, being immediately succeeded by heavy snow or rain, the labour was thrown far behind, as well as the lands into a bad state for tillage; and although, from the 17th to the end, both the plough and the harrow were well employed, yet a considerable proportion of the oat and bean seed land remains to be accomplished. Several fields of Autumn sown wheat (which were all laid down in an unfavourable condition) have also failed; a circumstance to be regretted, merely as occasioning a loss of seed and labour, as there can be little doubt that the crop with which they have been, or may yet be resown, whether of oats or barley, will yield full as large a return of food for the community.

The prices during this quarter have been uncommonly high. About the *Candlemas time*, indeed, there was a considerable depression in the rate, both of corn and fodder (a very usual occurrence at that term), which tended to confirm the unjust suspicion, that the former high price had proceeded more from a fictitious than a real scarcity. Whether this impression is yet effaced from the public mind, it is not material to inquire; but, from

from the market prices having again advanced, we can have no hesitation in renewing our recommendation of the most rigid economy in the use of corn, as well as the utmost possible exertion to get a foreign supply. The following have been the state of the markets:

	Bushels.	*January.*	*February.*	*March.*
		s. s.	s. s.	s. s.
Wheat per boll,	4,114 from	38 to 42	36 to 40	40 to 45
Beans and peas,		32 to 36	32 to 35	40 to 50
Barley ditto	5,962	32 to 35	32 to 35	35 to 42
Oats ditto,		30 to 38	30 to 36	35 to 45
		d. d.	d. d.	d. d.
Oat-meal per peck, 8 lib. Dutch, - -		30 to 32	29 to 30	30 to 36
Potatoes per peck, about ¼ cwt. - -		15	14	16
Beef per lb. 17½ oz. avoirdupois, - -		5 to 7	5 to 7	6 to 8
Hay per stone, 22 lib. avoirdupois, - -		21 to 26	16 to 18	21 to 24
		s. s.	s. s.	s. s. d.
Oat straw, about 15 stone hay weight, - -		16 to 17	10 to 14	14 to 17 6
Wheat straw, ditto, for litter, - -		9 to 10	6 to 8	9 to 10 6

Haddington, April 4.—We had a full market this day of all sorts of grain: The sale was heavy, particularly for beans and peas, of which grains a far larger quantity was presented than at any market this season. Wheat also sold dull, and prices declined nearly 2s. per boll. As the demand for oats is great, that grain maintained its price, and good barley rather met with an advance. There being few purchases made at the sea-ports for some time past, occasions our markets to be generally well supplied, though the demand for wheat has been uniformly less this year than usual. Prices—Wheat, 36s. to 49s. 6d.; barley, 38s. to 47s.; oats, 36s. to 45s.; beans, 30s. to 48s.; peas, 35s. to 51s.; tares, 70s. to 75s.;—all per Linlithgow measure.

ENG-

ENGLAND.

Doncaster, March 21.—All kinds of grain are excessively dear; and several small farmers are almost ruined with buying seed. Many stacks of Spring corn, that were thought decently got, have turned out rotten, mouldy, and of little or no value. We have severe weather for the season; and the lambs are coming fast into a cold and hungry world.

York, March 15.—The Grand Jury of this extensive county, impressed with a conviction, that, at this crisis, it is the duty of all to stand forward in the cause of their country, have come to a number of resolutions respecting the alarming scarcity of grain, and the means necessarily required for rendering the produce of the kingdom equal to the consumption of the inhabitants. Among several others, we observe the following resolution, which decidedly expresses their sentiments upon a point long considered as the chief obstruction to agricultural improvements:

Resolved,—That it seems a very well-founded opinion that was given by the persons appointed to examine into, and report upon the General State of Agriculture in this country, when they almost unanimously and uniformly declared, that the want of a fair and permanent compensation to the proprietors, in lieu of tithes in kind, is one of the greatest obstacles, not only to enclosure, but to the improvement of agriculture.

These resolutions contain matters of the utmost importance to the interest of Britain, and are signed by Sir George Armitage Sir Thomas Pilkington, Sir Charles Turner, Baronets, and twenty other respectable gentlemen. Instead of viewing the scarcity as temporary, and only requiring the application of palliatives, the Grand Jury very judiciously point out the real causes of the evil, and suggest remedies which would effectually prevent a repetition of the present calamities.

Wakefield, March 10.—The weather, for three weeks back, has been tolerably open, and a good deal of land has been got ploughed up for barley and oats, by those farmers who had their horses in proper order; but the high price of corn, and scarcity of hay, has prevented several small farmers from bringing their working cattle into condition, as they apprehended they could not

not maintain them through the Winter, by which means they will lose the benefit of the present frost, for making their land harrow freely. Very little of any thing is yet sown; for the frost is so severe as to stop ploughing, and it is just now beginning to snow. Fat cattle are high; and, as the turnip crop is nearly consumed, I fear a sufficient quantity will not be kept on to furnish a regular supply till the grass cattle come to market. Beef 7½d. and 8½d. per lb.; mutton 7d. and 8d.; wheat 11s. to 15s. per bushel; barley 5s. 6d. to 8s.; fine ditto for seed 10s.; oats 5s. 6d. to 7s. 6d.; new beans 10s. to 13s.: old ditto for seed 14s. 6d.; very few beans of crop 1799 are fit for seed.

Stafford, March 18.——Every article of grain has been very high in our markets; I have lately sold wheat from 15s. to 19s. per bushel; barley at 10s. 6d.; damaged ditto 5s. or 6s.; oats at 8s.; beans 13s. or 14s.; peas that are good seed 18s. or 20s.; all per bushel of 9½ gallons, which is our customary measure. Hay sells from seven to eight guineas per ton. Vetches that are sound cannot be procured. I had it in contemplation to sow thirteen acres; and, after great difficulty, could only procure ten bushels, at the extravagant price of 17s. per bushel, and those very bad; for, having tried them in a green-house, I found that not above one fourth of them have come up. I then sent to London, but the price of them in that market was from 21s. to 24s. per bushel: even these could not be warranted; so I will only sow a small quantity. My lambs are dropping fast every day; as yet I have lost only one. At our last fair, lean stock sold low, as the major part of farmers have not provender to spare. Fat cattle 6d. and 7d. per lb. Cheese 3l. 10s. per cwt.; butter 15½d. per lb. I have fed several beasts this Winter with boiled barley, which brings them on fast; they got a peck each per day. Straw is scarce and dear. Hope next harvest will be better than last, otherwise this country will be in a dreadful state.

Lincoln, March 18.——The circumstances of the times have occasioned every prudent family to adopt a variety of expedients to lessen the consumption of wheat and potatoes; and inferior grains are generally used as substitutes for what has hitherto been considered as the staff of life. The badness of barley has induced the maltsters to decline carrying on their business, which makes a greater portion of grain on hand than otherwise would have happened; indeed, as the quality of wheat is so bad, the transition from the one grain to the other is thereby rendered less difficult.

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The number of inhabitants in Britain being greatly increased, and luxury augmented, it appears absolutely necessary that the Legislature should take vigorous measures for bringing the wastes and commons into a cultivated and productive state. If the growth of corn is not increased in such a manner as to meet the increased consumption, it is obvious that our money must be constantly sent abroad to purchase the necessaries of life; and as different counties are differently circumstanced, it would be adviseable for the Legislature to pass an act, to empower each county to enclose their commons and wastes, so as they may be properly cultivated, and the quantity of grain and number of cattle thereby increased.

The average price of wheat is about 5l.; barley 50s.; beans 84s.; oats 35s.; per quarter of eight strikes or bushels each. Beef and mutton about 6d. per lib., and have not been scarce. But turnips being nearly done, I apprehend Winter-fed sheep will be scarce, when the turnip-fed mutton is finished. Hay is not plentiful, and sells at 5s. per cwt. The rate of markets for lean cattle are not yet well known, it being too early for the graziers to buy in stock for their pastures; but prices apparently will be high.

Northumberland Quarterly Report.

From the middle of January to the middle of February, a total stop was put to agricultural operations by the frost, and snow which accompanied it; the third week of February was more favourable, and a great deal of wheat was sown upon the naked fallows of last Summer, as well as upon the land cleared of turnip. A few oats and beans were also put in upon dry lands. The frost and snow again set in on the 24th February, and continued till the 20th March, which has occasioned a large portion of naked fallows upon wet soils to remain unsown, which of course must now be cropped with barley or oats; very few peas or beans are yet got in upon the clay soils.

The peas and beans of last crop are so much injured, that very few are fit for seed, which has rendered it necessary to import considerable quantities for that purpose, as also for mixing with barley for bread.

Turnips in some places have suffered much by frost, and a general scarcity of this valuable root begins to prevail. The expence of feeding on turnip this Winter has been very high, from 9s. to 12s. per week, and now not to be had at these prices.

Fat stock has advanced within the last month, and will probably

bly get higher soon, as a scarcity is expected. The prices at present are, beef 7s. 6d. and 8s. per stone of 14 lib.; mutton 7d. or 8d. per lib. both sinking the offal.

In the prices of grain, there probably never was so great a variety as this year. The following, I believe, are nearly the averages of the lowest and highest prices for the last three months.

Wheat, from	7s.	to 13s.	per bushel.
Barley,	4s.	to 8s.	ditto.
Oats,	4s.	to 7s.	ditto.
Peas,	8s.	to 11s.	ditto.
Beans	8s.	to 12s.	ditto.

Oats for seed have been sold as high as 7s. and 8s. per bushel; peas 11s.; and beans 13s. 4d. per bushel, Winchester measure.——*March* 24.

Yorkshire Quarterly Report.

The present favourable weather has enabled the farmer to commence the operations of his Spring seed-time with promising auspices, except from the uncertainty of the vegetation of a considerable proportion of the grain. A greater allowance of seed will be sown on every acre than usual, which will in no small degree aggravate the evil of scarcity, so justly dreaded. A considerable part of the bean lands is sown; the oats are in great forwardness; and some barley is put in upon the dry soils after turnips; but the preparation for this grain is not generally much advanced, though the turnips are nearly eaten off the ground.

The wheats now assume a very promising appearance on dry warm soils. On the wet and loose lands, the frequency of bare frosts has affected them severely; on some of them the blade is scarcely visible.

From the general deficiency of turnips towards the Spring, some apprehensions were entertained of a scarcity of fodder; milder weather has in some degree abated them. Hay is sold from 5l. to 8l. per ton.

The price of wheat is about 14s., though it is rather a falling than a rising article; barley 10s., oats 6s., and beans at the enormous rate of 14s. per bushel of Winchester, for the best of each sort. The oats have turned out better than many persons expected; but the quality of general samples is miserably bad. Considerable loss has ensued from warehousing some parcels of this and other grain; and corn this season is in too damp a state for keeping on speculation, unless it was kiln-

kiln-dried. Potatoes are scarce and dear, 4s. per bushel; many are wanted for seed, and it is to be feared many will be wasted, as the cultivators of this root are unfortunately too much in the habit of using more than double the necessary quantity. The sets or eyes, judiciously cut out, of from three to four sacks, are sufficient for an acre, and there will remain nearly two thirds of the potatoes for boiling. This is a circumstance demanding attention at all times, and now in a tenfold degree.

Fat cattle are sold at high prices, about 8s. per stone of 14 lib. sinking the offal. Very few are turned off really fat. Lean cattle and sheep remain at moderate prices. The wedders fattened upon turnips now flocking into the markets, render the price of mutton somewhat lower than beef; the drop of lambs appears rather scanty and backward.

Good horses sell at high prices; and all sorts are more in demand than for some time past, or than could have been expected.——*March* 24.

Extract of a Letter from a Yorkshire Farmer, dated March 31.—I shall endeavour to give you a statement of our present markets, &c.; but they vary so much, that it is impossible to be accurate. Last market days, at Wakefield and Pontefract, prices were as follow:

Wheat 40s. to 50s. per load,
Beans 42s. to 50s per ditto,
Barley 60s. to 73s. per quarter of 8 bushels,
Oats 50s. to 60s. per ditto,
Bread meal 4s. 2d. per stone,
Malt 10s. to 12s. 6d. per bushel,
Hay 6l. to 8l. per ton,
Butcher meat 5d. to 8d. per lib.
Oil cake 12l. 12s. per ton,
Rape dust 28s. per quarter,
Turnips 2l. 2s. per waggon load.

Wakefield market, on Wednesday, was well filled with sheep, and such as were fat sold well; but a great many, from want of food, are barely fit for killing. Beasts of good quality are scarce, and many are slaughtered before they are in proper condition. No fat lamb is yet presented in the market; but the ewes are lambing fast, and promise well. Lean beasts, in good order, sell well; but the expence of the straw-yard, which is paid at 2s. 6d. per week, limits the demand. It is much to be wished, that a good crop may be got this year, which will set all things

to

to rights again; for the hardships of persons with small incomes, tradesmen, mechanics, and little farmers, are much to be lamented. A general apprehension prevails, that wheat of the coming crop will be defective. Some few persons have already sown part of it over again; but we often sow oats amongst it when this, at this season of the year.

On Wednesday the 28th March, Lord CARRINGTON was elected President of the BOARD of AGRICULTURE, in room of Lord SOMMERVILLE.

The Board of Agriculture, taking into their serious consideration the high price of corn in 1795, and the present severe scarcity, have wrote letters to their different correspondents in the kingdom, requesting their opinion on the best means of preventing the like in future; which we hope will cause the attention of persons versant in inquiries of this nature, to be directed to such an important and salutary object.

We have not heard of any other particular proceedings which have lately occurred at the Board. But when matters of importance occupy the deliberations of this respectable Institution, the same shall always be fully detailed in this Magazine.

Average Prices of corn, per Quarter, for England and Wales.

Wheat,	Rye,	Barley,	Oats,	Beans,	Peas.
107s. 8d.	78s. 5d.	56s. 0d.	39s. 6d.	69s. 4d.	68s. 2d.

Oat meal per boll of 140 lib. avoirdupois, 66s. 9d.

Extract of a Letter from London, March 31.—The counties round London have had a favourable seed-time; and the different grains are all put into the ground in good order. The wheat fields look exceedingly well, having greatly improved in the course of last month; though, on some of the higher lying lands, they still have a yellow appearance. Seed corn of every kind has been very high this Spring. Oats 60s. to 63s. per quarter. Barley 75s. Beans 66s. Small ditto 72s. Tares are now as high as 21s. to 23s. per bushel. At Marklane, the prices of grain have been steady for five weeks past. Wheat was rather high this day. Fine Essex 124s. per quarter. Ordinary and kiln-dried barley 40s. to 50s. Fine mealing barley 70s. to 72s., but few samples good. Malt from 50s. to 86s; fine malt very scarce. Feed oats 35s. to 42s. Polands 44s.

to 49s. No real good oats at market. Hog peas 63s. and 66s.; beans 46s. to 56s.; good rye-grass 5s. 6d. per bushel. The prices of clover seeds are various; fine from 120s. to 126s.; ordinary very low. The quantity of foreign grain imported into London for three months past, has been but small; not more than 15,000 quarters of wheat, and 10,000 quarters of oats. By letters from Embden, we learn that the prohibition of exporting flour, and all kinds of grain from Holland, is continued to the 31st August, so that the ports of the Baltic are the only places on the Continent from whence any supply of consequence can be expected. The regulation adopted, of not allowing bread to be sold till twenty-four hours after it is baked, together with the economy which the rumour of scarcity has produced in noblemens and gentlemens houses, have lessened the consumption in London fully one third. Potatoes are very ordinary, and much advanced in price. The best Yorkshire sort are now selling at 14l. per ton, being 3s. 6d. per peck, according to your measure. Inferior qualities at 10l. and 12l., and are retailed at 2d. per lib. Garden stuffs are equally scarce and dear, in consequence of which the prices of boiling and split peas have advanced; fine Suffolks to 108s., and split peas to 130s. and 140s. Hay and straw have for two months past increased in price. Best meadow hay 126s. to 132s. per load; clover ditto 130s. to 140s.; straw 60s. to 63s. Smithfield market, for some time past, has been well supplied with cattle, sheep, and pigs. The present price of beef, sinking the offal, is from 4s. 8d. to 5s. 8d. per stone of 8 lib. avoirdupois. Mutton 4s. 6d. to 5s. 6d.; veal 5s. to 6s.; pork 9d. per lib. by the carcase. There has been a greater proportion of fat cattle at market, of late, than appeared before Christmas, numbers of them being stall fed.

Extract of a Letter from Newcastle, March 31st.—The highest price given for wheat of this country's growth, at our market this day, was 104s. per quarter. Some samples from Norfolk brought 112s.; but we must observe, that the latter is about one tenth less measure than the former. We have very little old wheat on hand. Good Dantzig would bring nearly 120s. per quarter. Barley fit for malting is worth 50s. per quarter, and upwards. Oats 50s.; ditto for seed 60s.

OBITUARY.

Died at Mount Vernon in Virginia, on the 14th December last, the great and good GEORGE WASHINGTON, Commander in Chief of the Army of the United States of America, late President and Founder of the Federal Union of that free and rising nation.

It is with pride we assume the privilege of enrolling his name in the Obituary of eminent and skilful farmers, and we have reason to believe he would not have disdained the prospect of this distinction, in the midst of all the eulogy he has justly received, and is hereafter to receive, with the trial ordeal of dispassionate posterity, and the lapse of ages.

With his political and warlike life, we have nothing to do; and it is a subject only for the historian. He was one of those, whom the Almighty, in every age, has chosen and raised up to promote the ulterior designs of his mercy and goodness in the melioration of his creatures.

It may be said of Washington, as was written by Tacitus of Agricola, that though he was snatched away whilst his age was not broken by infirmity, or injured by decay of reason; yet that, if his life be measured by his glory, he attained to a mighty length of days; for every true felicity, namely, all such as arise from virtue, he had already enjoyed to the full. As he had likewise held the supreme authority of the State, with the confidence and applause of all wise and good men in every part of the world, as well as among those he governed or commanded, and had triumphal honours in a war undertaken in defence of the liberties of his country,—what more could fortune add to his lustre and renown? After enormous wealth he sought not; an honourable share he possessed. As the infirmity of nature requires, in our last moments, the tender sympathy of relations and friends, and the consoling views of futurity,—these also he had in his amiable and worthy consort Mrs Washington,—in his kindred, and in that excellent man Tobias Lear, whose worth is not unknown in Scotland, and, where best known, will be most valued. He died with the fortitude of a philosopher, and, what is much better, with the hopes of a Christian. He, therefore, to continue the parallel, may be accounted happy; since, by dying according to his own magnanimous, yet humble wish, expressed in his farewel address to the American people, whilst his credit was nowise impaired, his fame in its full splendour, his relations and friends not only in a state of security, but

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of comfort and honour, he was to escape the unforeseen evils of futurity, and the sorrows of declining years. His last act, relating to the councils of his nation, was to coincide with the worthy associate of his youth, Mr JOHN ADAMS, and the other Members of the Council of State, and of the Senate, in holding forth and looking for the return of peace, not allowing false pride and resentment to counteract the duties of a Patriot and a Christian, and the return of the destructive sword of war into the scabbard. This sentiment and expression, we transcribe from one of his letters to a Noble Lord in this country; and a passage from another, written 22d April 1793, when moderation was least to be expected, is worthy of the highest approbation: "To be little heard of in the great world of politics, in the words of your Lordship's letter, are expressive of my sentiments; and I believe it is the sincere wish of United America, to have nothing to do with the political intrigues, or the squabbles of European nations; but, on the contrary, to exchange commodities, and live in peace and amity with all the inhabitants of the earth." And again, that great and good man, when he put the last hand to the Federal Union, expressed himself thus: "The foundations of national policy must be laid in the pure and immutable principles of private morality; since there is no truth more thoroughly established, than that there exists, in the economy and course of nature, an indissoluble union between virtue and happiness, between duty and advantage, between the genuine maxims of an honest and magnanimous people, and the solid rewards of public prosperity and felicity; since we ought to be no less persuaded that the propitious smiles of Heaven can never be expected on a nation that disregards the eternal rules of order and right, which Heaven itself has ordained; and since the preservation of the sacred fire of liberty, and the destiny of the Republican model of Government, are justly considered as deeply, yet perhaps finally staked, in the experiment entrusted to the hand of the American people."

Thus far, regarding the public character of this illustrious man. As a private citizen and agriculturist, he was amiably distinguished in all their relations. He held 8000 acres in his own management at Mount Vernon; his black people never felt the chains of bondage; and his deeply sagacious plan was, by education and time, to render them capable of citizenship and freedom. Great difficulty he had to encounter in the cultivation of his land, where tenantry is almost unknown; but he performed much more than could have been expected; and his last aim, in corresponding with the Noble Lord already alluded to, was to create a free tenantry in America, upon the most li-

beral principles of unfettered meliorating leases, with a rent to be estimated according to the value of the fruits of the earth.

"His saltem accumuler donis et fungar inani munere."

January 1800.—At Airfield, in the parish of Cranston, county of Mid-Lothian, aged 76, Mr THOMAS RENNIE, farmer there.

Mr Rennie possessed one of the Long-Niddry farms upon the Seton estate, for more than 40 years; and, among a number of eminent farmers in his neighbourhood, was distinguished for rural knowledge, and assiduous attention to the different branches of operative husbandry. When the York-Buildings Company sold the estate in 1779, and the tenants were generally removed to make room for a new set of possessors, Mr Rennie took a lease of Airfield farm from Sir John Dalrymple, Bart.; which farm he rapidly improved in a superior style.

Mr GEORGE RONALDSON, farmer at Dodridge, in the county of East-Lothian.

At West Walton, county of Norfolk, Mr N. COKER, farmer and grazier.

At Inkborough, county of Worcester, HENRY DAVIS, a labourer. He was born in 1699; and, during the long period of his existence, had lived the quiet and peaceable life of an ancient English husbandman. He was particularly skilful in the art of grafting trees; and, at the age of 96, pursued his occupation with vigour and activity.

At Ashton, county of Suffolk, Mr ROBERT POOLE, a respectable farmer.

At Blisthorpe, Nottinghamshire, Mr FLINT, farmer there.

At Thirleston, near Whittingham, Northumberland, Mr RALPH BOLOUR, an eminent farmer.

At Yeaverin, Mr WILLIAM ATKINSON, a warm friend to agricultural improvements.

FIARS OF GRAIN IN SCOTLAND—CROP 1799.

Wigtonshire.

	L.	s.	d.		L.	s.	d.
Oat-meal -	2	16	0	Best bear -	2	5	0
Farm meal -	2	8	0	Farm bear -	2	0	0
White corn -	2	0	0	Malt - -	2	15	0
Mixed corn -	1	15	0	Barley -	2	10	0
Grey corn -	1	5	0	Wheat, per quarter	3	12	0

All Galloway Measure.

Berwickshire.

Wheat, per boll	1	17	4	Merse oats -	1	9	0
Merse barley -	1	12	0	Lammermuir ditto	1	5	0
Lammermuir ditto	1	6	0	Peas - -	1	13	4
Rough bear -	1	5	0	Meal, 8 st. to boll	1	16	0

Lanarkshire.

Best oat-meal, per boll - -	1	13	0	Second malt (duty included) -	1	8	0
Second ditto -	1	11	0	Best wheat -	1	17	0
Best oats (seed excepted) -	1	3	0	Second ditto -	1	14	6
Second ditto -	0	18	0	Best bear -	1	7	0
Best malt (duty included) -	1	14	0	Second ditto -	1	5	0
				Best flour -	2	5	0
				Second ditto -	2	0	0

Stirlingshire.

Oat-meal -	1	10	0	Kerse oats -	1	4	0
Wheat - -	2	0	0	Dry-field oats -	1	3	0
Common malt -	1	10	0	Airseed oats -	1	6	0
Kerse bear -	1	7	0	Kerse barley -	1	10	0
Dry-field barley	1	6	0	Dry-field barley	1	9	0
Muirland bear -	1	0	0	Barley malt -	1	12	0
Peas and beans	1	8	0				

Clackmannanshire.

Wheat, per boll	1	15	0	White Kerse oats	1	4	0
Kerse bear -	1	10	0	Dry-field oats -	1	3	0
Dry-field bear	1	7	6	Black oats -	0	18	0
Muirland bear -	1	2	0	Peas - -	1	6	0
Meal - -	1	8	6	Malt - -	1	12	0

Archbishoprick

Archbishoprick of Glasgow.

	L.	s.	d.		L.	s.	d.
Meal, per boll -	1	16	0	Oats, per boll -	1	4	0
Bear ditto -	1	10	0				

Commissariot of Hamilton and Campsie.

Meal, per boll -	1	16	2	Bear, per boll -	1	6	3

Commissariot of Glasgow.

Meal, per boll -	1	15	4	Bear, per boll -	1	5	6

Forfarshire.

Wheat, per boll	1	15	9	Oats - -	1	1	10
Barley - -	1	4	3	Meal - -	1	8	8
Chester bear -	1	2	2				

Kincardineshire.

Oat-meal, per boll	1	9	0	Bear, without fodder - -	1	7	0
White oats, with fodder - -	1	16	0	Peas, without fodder - -	1	10	0
Do. without fodder	1	4	0	Wheat - -	1	17	0
Bear, with fodder	1	10	0				

Elginshire.

Wheat, per boll	2	0	0	Oats, 5 fir. to boll	1	6	0
Peas, beans, rye	1	6	0	Oat-meal, 8 stone Dutch to boll	1	3	3
Barley or bear	1	6	0				

Ayrshire.

Oat-meal, per boll 8 stone -	1	8	0	Wheat, per boll, 4 bush. Winchester	1	15	0
Bear, per boll, 8 bush. Winchester	1	15	0	White corn per boll 8 bush. ditto	1	8	0

Mid-Lothian.

Best wheat, per boll	2	0	9	Best oats -	1	9	6
Second ditto -	1	16	5	Second ditto -	2	2	0
Best barley -	1	13	1	Peas and beans	1	10	9
Second ditto -	1	9	5	Oat-meal -	1	14	3
Third ditto -	1	7	0				

East-

East-Lothian.

	1.		2.		3.	
	s.	d.	s.	d.	s.	d.
Wheat,	43	9	40	9¾	34	8
Barley,	34	8	31	11	29	2
Oats, -	32	4½	28	7½	25	0½
Peas, -	38	1½	33	1½	28	6¼

The East-Lothian fiars are thought to be calculated with greater accuracy than those of any other county in Scotland, being formed from the averages of the prices of grain actually bought or sold by 70 or 80 of the most respectable corn-dealers and farmers in the county, with the addition of 2½ per cent. put by the Sheriff upon the price. The reason of this addition proceeded from its being anciently the custom to strike a second fiars at Lammas; but, since 1678, to save that trouble, 2½ per cent has been added, which, it is supposed, in ordinary years, will compensate for the rise in markets during the Summer months.

The proof, which is taken upon oath by the Sheriff-depute of the county, includes the prices of a very considerable quantity of grain, and is in every respect conducted with great minuteness and regularity. As a number of the clergy receive their stipends according to the fiars, and rents in several cases are paid in the same manner, it is a matter of importance to the county, that the scale of prices should be justly ascertained.

NOTES TO CORRESPONDENTS.

THE very interesting and valuable *Rural Sketch of the County of Lancaster* will appear in our next.

Extracts from Mr Wright's treatise on the *floating of land*, agreeable to the request of our *Hawick Correspondent*, shall be given. If his letter had come to hand in time, it should have been presented in this number. We will be extremely happy to hear from him afterwards.

If *S. A. R.* does not know whether or not to sow his land with *flax-seed*, he is not a proper correspondent for the Farmer's Magazine.—We suspect this gentleman, however, to be more *rogue* than *fool*.

We

We are sorry *W. C.'s* letter did not arrive sooner, as it contains important information. An extract is given, and his future correspondence requested.

We thank the worthy clergyman who has kindly informed us, where we can receive "*an authentic detail of the misery of Scotland, occasioned by the failure of the crops* 1697-8-9," which shall be attended to.

Mr *Bakewell's Memoirs* are delayed, in expectation of some additional materials from England.

The review of Rochefoucault's Travels, Vol. II. is unavoidably postponed, together with several other articles.

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